



There's More to Flying Than Meets the Sky

A BRIEF HISTORY OF AFCC AND AIR FORCE AIR TRAFFIC SERVICES

by 2nd Lt. Jan Wood



AFCC 20th Anniversary Logo . . . The numbers on the globe represent the years of the command and its worldwide dispersment. The lightning flashes depict the span of command and control, and the border around the entire design is the galactic boundary within which the command performs its mission.

The Air Force Communications Command (AFCC) celebrated its 20th Anniversary as a major command on July 1, 1981, adopting the theme "A Past of Pride—A Future to Fulfill" to portray 20 years of "Providing the Reins of Command" for the Air Force. AFCC was designated a command only in 1961, hut its history of communications and air traffic control support for military aviation began many years before. . . .

HQ AFCC, Scott AFB, III.—Although the U.S. Army Signal Corps helped pioneer the development of airborne radio, it was many years before the full potential of electronics as an aid to military aviation was realized. Signal Corps' experiments with aircraft radio began as early as 1911, and much early work on aircraft radiotelephones was done by their laboratories at Camp Vail, New Jersey, with extensive tests occurring at Langley Field, Virginia, in 1917. In the postwar years, efforts at McCook Field, Ohio, led to construction of radio beacons and direction finders, as well as filters that reduced the radio interference caused by

engine ignition systems. By the early 1930s, the Army Signal Corps offered limited airways communications service as a part of its general mission and as flights increased in number, Air Corps radio stations were established at some airfields.

Despite these procurement actions and technical advances, and even though the benefits of the systematic use of such equipment had been shown during the Air Service Model Airway project of 1922-1925, the way in which communications were used to support air operations remained wedded to the past. Each communications station was responsible to the local post commander. Flight and weather messages had to be approved by the base adjutant, and were transmitted on the Army's administrative communications network. Consequently, aircraft often reached their destinations long before the messages announcing their departure. In addition to these administrative obstacles, radio operators frequently were assigned other base duties even if aircraft were inbound, preventing the continuous communications watch necessary for safe flying operations.

The impetus to create a system dedicated solely to supporting flying operations finally came from the 1934 flight of 10 Martin B-10 bombers from Bolling Field, District of Columbia, to Fairbanks, Alaska. The leader of the mission, Lt. Col. (later General of the Air Force) "Hap" Arnold, who had participated in some of the first experiments with airborne radio, and his communications officer, Captain (later Major General) Harold M. McClelland, arranged for Signal Corps ground stations along the route to Alaska to aid the mission with weather and flight information. These stations played a key part in the successful long-distance trip, but deficiencies in the service they provided made it clear that a permanent system, whose sole function was to provide point-to-point and air-to-ground communications, navigation aids, and air traffic control was necessary to assure safe and regular air travel.

In the months following the Alaska flight, Arnold laid out the requirements for this support, and McClelland, with the aid of Capt. Wallace G. Smith, set out to gain the objective.

Success was achieved on November 15, 1938, when the Army Airways Communications System (AACS) was established, with Wallace Smith, now a Major and Chief of the Communications Section at the Office of the Chief of the Air Corps, as its head. The AACS mission was to operate and maintain airway communications for military aircraft. The system was to include airway facilities, cryptographic sections, message centers, and navigational aids necessary to support aircraft in flight. AACS began operations with three officers and 300 enlisted men and the 33 Air Corps airways radio stations scattered throughout the United States. These facilities were no longer isolated, local operations, however. Under AACS, they were linked together into a complete and cooperative system to aid and expedite military flights. Three communications squadrons, the 1st at March Field, California, the 2nd at Langley Field, and the 3rd at Barksdale Field, Louisiana, were organized to oversee the stations at army flying fields within the three regions into which the original AACS was divided.¹

WORLD WAR II

As the United States moved closer to participation in World War II, increased flight operations demanded a greatly expanded military airways communications network. Efforts to extend the airways system from the continental United States through

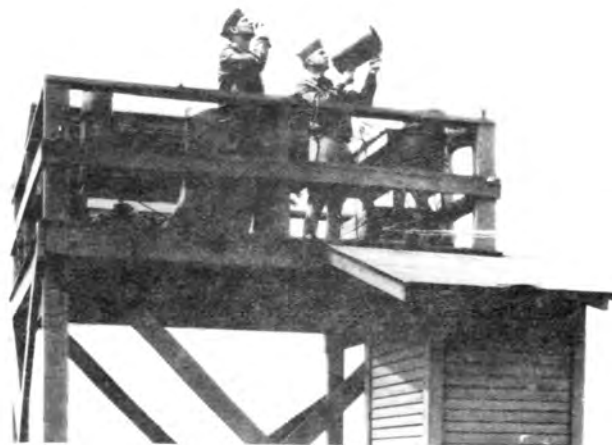


SCS-51 instrument landing system installation of the 4th Army Airways Communications System Wing at Kwanghan, China, Nov. 1944.
(Official U.S. Air Force Photo)



When bad weather cut visibility to a minimum, "Zippo," a precision radar, ensured a safe landing for aircraft arriving at Harmon Field, Guam, Marianas Islands. Operators are AACS men attached to the 20th Air Force.

(Official U.S. Air Force Photo)



A light gun supplements radio for signaling aircraft and airfield vehicles.
(Official U.S. Air Force Photo)



Temporary tower on completed Bolo Strip, part of the 148th Army Airways Communication System. Okinawa, Ryukyu Retto, Aug. 1945. (USAF Photo)

Alaska and the North Atlantic, to Europe along the lend-lease ferry routes, and across the Pacific to the Philippines were underway when the United States entered the war. Five new AACS regions had been formed for this purpose. Frequently the AACS was the first communications link into a remote part of the world, and carried not only airways communications, but all traffic for the area. AACS airways served as the routes by which U.S. airpower moved to the front. As allied forces regained ground, AACS personnel not only supported flying operations at established bases, but went forward to provide communications and air traffic control at front-line airfields. The first AACS control tower on the continent of Europe in June 1944, for example, was housed in the nose of a glider pushed atop a pile of dirt.

World War II also was marked by the advent of new technology which enhanced AACS' ability to aid operations. The radio teletype, ground controlled approach radar (GCA), and the instrument landing system were among the most significant of these developments. Dr. Luis Alvarez of the MIT Radiation Laboratory won the 1946 Collier Trophy for developing the GCA, which entered operational service with AACS in 1944. The GCA operated by AACS on Iwo Jima proved invaluable in assisting crippled aircraft attempting to reach safety on the island, guiding as many as 20 B-29s to emergency landings through bad weather on one night. GCA operations were not limited to aiding aircraft in bad weather; on 15 occasions in Europe, deployed GCAs were able to warn USAAF night fighters that they were being tracked by enemy aircraft.

By V-J day, AACS personnel had built the most extensive airways communications network the world had yet known. Since 1943, it had been a separate AAF command. AACS was composed of 8 wings, 21 groups, 55 squadrons, and more than 700 detachments and had operated from 819 different locations

throughout the world. From the original three officers and 300 enlisted men, its personnel strength had grown to 4,500 officers and 45,000 enlisted men. Some 38 allied nations used AACS facilities during the war.

The first taste of combat for AACS in WWII had involved Major (later Lt. Gen.) Gordon A. Blake, Regional Control Officer for the 7th AACS Region, as well as Base Operations Officer at Hickam Field, Hawaii, standing in the Hickam control tower guiding a flight of B-17s to safety in the midst of the Japanese attack. It was, therefore, only appropriate that the end of the conflict was marked by the arrival of the then Colonel Blake and five members of his 7th AACS Wing at Atsugi Airfield near Tokyo, Japan, on August 28, 1945. As part of a 150-man task force to establish an airfield at Atsugi, their job was to set up air traffic control and communications to aid the arrival of General MacArthur and his occupation forces on the 30th. The AACS team initially began operations with a radio-equipped Jeep, soon supplemented by a wooden control tower constructed on top of an airfield building. On the morning of August 30, two hours before the first of the C-54s carrying the occupation forces touched down, five AACS aircraft, equipped as flying radio stations, landed at Atsugi to provide a fuller range of support.² The flow of transports began at 0800 hours, and by midafternoon AACS controllers had handled 340 takeoffs and landings.

THE POSTWAR ERA

The end of hostilities did not complete or even simplify the AACS mission. The mass return to civilian life of thousands of AACS personnel meant merely that the job of those remaining would be more difficult. By 1946, many of the people who had built and manned the wartime system left for home. The lack of



Typical of the Ingenuity of the U.S. Air Force in Korea was the addition of the perch atop an old Korean building at Taegu, in order to provide an "open-air" control tower for operations of the fighter strip located there. Oct. 1950. (Official U.S. Air Force Photo)

replacements, trained or otherwise, caused major problems only partially resolved by attempts to hire civilian technicians.

In March 1946, AACS, along with several other technical services having Air Force-wide missions, became a part of the Air Transport Command, the predecessor of today's Military Airlift Command. This association was to last through 1961. As part of this reorganization, the command was renamed Air Communications Service. In September 1946, the name was again changed, this time to Airways and Air Communications Service, in order to retain the AACS initials.

By 1946, AACS personnel strength had declined to 8,600. Of eight wartime wings, only three wings and three separate groups remained. However, increasing world tensions began to prompt a recovery, which proceeded slowly in 1947 and 1948.

The Berlin Airlift (Operation Vittles) of 1948-49 was not only a clear sign of those tensions, but also once again proved that airways communications and air traffic services were essential for large-scale, around-the-clock air movements. To meet expanded requirements, AACS personnel and equipment from throughout Europe were concentrated at airlift bases, an action which required the shutting down of AACS operations at some other locations. The corridors between Berlin and the west were established with AACS beacons, radio ranges, and search radar. At Tempelhof, operators using AACS' only AN/CPN-4 ground controlled approach radar, flown in from Canada to supplement the base's older AN/MPN-1, ran landings at three-minute intervals, thus allowing the airlift to continue in marginal weather conditions. The CPN-4, whose improved capabilities made possible the more expeditious handling of traffic arriving at Berlin, was to be the first of the MPN-13/MPN-14 family of

GCA equipment, still in service today.² AACS units handled more than 70,000 GCA landings, 4,800 of which were successfully made when the weather was officially "below minimums," 1.1 million air-to-ground contacts, and 2.3 million control tower contacts during the airlift.

KOREA

Soon after the successful completion of the Berlin Airlift, the services of AACS were needed on the other side of the globe, as war broke out in Korea.

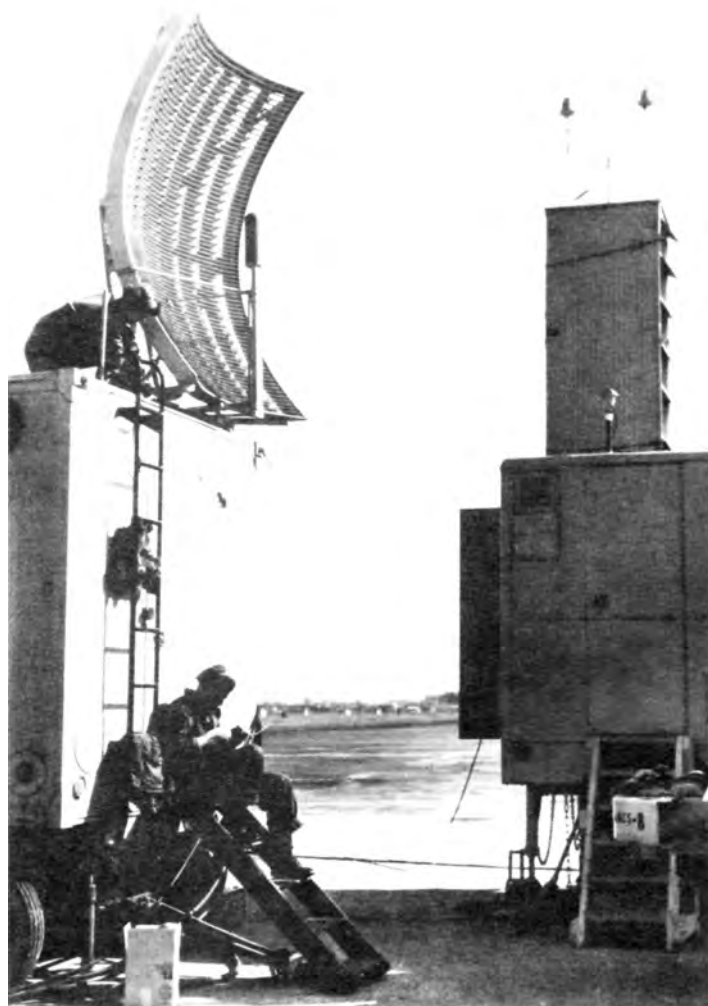
The 1808th AACS Wing, with headquarters in Tokyo, was responsible for air traffic control and air communications services for the entire Far East and Pacific areas. Subordinate units operated control towers, direction finder stations, and several Military Air Traffic Control Centers (MATCON) throughout the region. However, the only AACS facility in Korea at the time, a low-power homing beacon at Kimpo Airport, soon fell into enemy hands.

AACS personnel soon entered the peninsula, where the flow of battle meant that they frequently had to take up arms to either defend or secure the airfields they operated.

Remembering lessons of the previous war, a long-sought Mobile Communications Squadron was organized to provide facilities which could be rapidly moved to handle emergency situations.

After the re-conquest of Kimpo Airport by the Marines on 15 September 1950, AACS personnel immediately put the airfield back into operation. And the first Air Force personnel on the ground in North Korea were the AACS team who added VH antennas and an American flag to the tower at Wonsan AB.

The intervention of the Chinese Communists brought increased air operations and the first combat between jet aircraft. The system of controlling aircraft, geared to piston-engined



This ground controlled approach radar in Korea was used to direct flyers to a safe landing in adverse weather. Members of the 1808th Airways and Air Communications Service, attached to the 374th Troop Carrier Wing of the Far East Air Force's 315th Air Division (Combat Cargo) operated and maintained the mobile unit. Technicians shown are: MSgt. Robert W. Bagby, on top of trailer, and Cpl. Arthur W. White. The personnel and equipment of the 1808th AACS Wing greatly aided the Korean airlifts, made possible many safe landings in the worst types of weather. April 1951. (Official U.S. Air Force Photo)



A Far East Air Forces Bomber Command Air Base, Japan ... Air Force B-29 of the Japan-based 98th Bombardment Wing makes a low pass by an MPN/1 ground controlled approach radar in Dec. 1951. (Official U.S. Air Force Photo)

airplanes, proved inadequate for the faster jets. The mountainous terrain of Korea and Japan, often shrouded in rain and fog, compounded the problems. Even in good weather, the airfield traffic patterns were saturated, requiring the highest degree of skill from AACS personnel operating the control towers and other air control facilities. During the May 1951 emergency airlift of the 187th Regimental Combat Team to Korea, for example, AACS personnel at Pusan East handled a takeoff or landing every three minutes. Of course, the most famous AACS facility of the conflict was the control tower at Itazuke AB, Japan, a somewhat exaggerated view of whose services was immortalized in song.

THE 1950s

Support for air operations in Korea was only part of AACS activities during the 1950s. The introduction of new technology, replacing that of World War II, was a major aspect of the period. The low and medium frequency radio ranges and beacons started to be supplemented by very high frequency omni ranges (VORs) and the UHF Tactical Aids to Navigation (TACANs), while local military ground-air communications moved to the UHF portion of the radio spectrum where more frequencies were available. Morse code in ground-air communications was finally replaced by voice. The development of single side band (SSB) began to enhance the use of high frequency radio for long-distance air-ground voice communications. To provide constant contact with aircraft far from any base, high power ground-to-air transmitters were made part of the AACS GLOBECOM system of point-to-point communications. Air Force bases were equipped with new search and precision approach radars, many of which would still be in service in the 1980s.³

Starting in 1954, AACS formed special units in 14 locations worldwide to make inflight evaluations of the performance of its navigational aids and radars. These units flew World War II era AC-47 and AC-54 aircraft equipped with special electronics equipment to measure the radiation patterns of AACS equipment. These aircraft were later joined by T-33s and AT-29s which provided the ability to perform checks on NAVAID per-



An AACS operator in this crudely constructed but serviceable control tower has cleared a U.S. Far East Air Forces C-119 Flying Boxcar to land at an advanced Korean airstrip. U.S. Army engineers continue with their construction work as the transport lands. June 1951. (Official U.S. Air Force Photo)



The "Thunder Dragons," a fighter group in China, operated from fields where facilities were frequently negligible and airlift tonnage was kept at a minimum. Accordingly, Capt. George L. Timme had to keep size and weight and portability in mind when he decided to construct a radio control tower to fill in until a more permanent structure could be built. Here he is shown operating his set at a base somewhere in China.
(Official U.S. Air Force Photo)



1808th AACCS, Korea ... Keeping the crowded airways throughout Korea safe and orderly for high priority jet combat aircraft was a full-time responsibility of the AACCS Military Air Traffic Control Center (MATCON). Air Traffic control officer at this forward Korea air base, 1st Lt. George Reynolds, watches his approach controllers, A1C James J. Carden, radio flight directions to an aircraft nearing the base. Behind Reynolds and Carden, A3C William Lewis, route controller, checks the flights of aircraft farther from the air base. June 1952.
(Official U.S. Air Force Photo)



Control tower, Kunsan Air Base, Korea. Dec. 1951. (Official U.S. Air Force Photo)



Control tower, Hoengsong Air Base, Korea. Dec. 1951. (Official USAF Photo)



formance at higher altitudes.⁴ Evaluations were made to commission facilities before they were placed into service, and then periodically to ensure that they were maintained to the strictest tolerances. At the same time, these units evaluated the performance of AACS controllers directing aircraft. Following the passage of the FAA Act in 1958, flight inspection became the responsibility of the FAA, but the transition would take several years, and AACS would ultimately retain some tasks.

In response to a growing need for fast and reliable movement of information, the Air Force developed a system of long-haul communications circuits connected by manual, semi-automatic and automatic message switching or relay centers, and the AACS function was broadened from its old role of communications in support of air traffic and weather to include the handling of administrative messages between Air Force installations. However, other communications systems were still operated by communications personnel assigned to individual commands. By 1961, one person out of every 16 in the Air Force was involved in AACS communications or air traffic services.

A MAJOR COMMAND

The need to effectively manage these communications networks led to the July 1, 1961, establishment of the Air Force Communications Service (AFCS), as a major command and the single manager for U.S. Air Force common user communications.

AFCS initially consisted of the existing resources of AACS, including some 30,000 personnel already responsible for basic air traffic control and long-haul message handling. Over the next two years, AFCS assumed on-station and most special command-oriented communications for all Air Force commands except the Strategic Air Command (SAC), Aerospace Defense Command (ADC), and USAF Security Service (USAFSS). AFCS also took a major role in the two systems which provide voice and data communications for the entire Department of Defense, AUTOVON and AUTODIN. Absorbing the excluded Air Force functions would take some time. Large portions of the ADC support mission were transferred to AFCS in 1971, the final elements being turned over in 1979. It was not until 1976 that

New facility opens . . . After almost a year of operation from a modified ground controlled approach radar unit, the air traffic controllers at Tuy Hoa Air Base in South Vietnam began controlling from a new facility. The new unit, a mobile RAPCON (radar approach control) gave the controllers the capability of working precision radar approaches on both parallel runways here through the use of dual centerlines on the radar scope. The controllers at Tuy Hoa are members of the 1884th Communications Squadron. Dec. 1967. (Official U.S. Air Force Photo)

AFCS received these responsibilities from SAC, while the USAFSS tasks were acquired in 1979-

Since AFCS was to retain a flight check capability for some unique Air Force requirements, aircraft modernization was carried out. AFCS introduced Lockheed C-140 aircraft in 1962, replacing most remaining flight check AT-29s and AC-47s. The speed, range, and special capabilities of this all-weather jet aircraft could enable it to reach any contingency area within 10 hours. 1962 also marked the end of AFCS' use of its only B-47 in a special high-altitude flight check program.⁴

The FAA finally assumed its flight inspection responsibilities for permanently installed military navigational aids in 1963. Eleven AFCC aircraft were transferred to the FAA, reducing the



U.S. Air Force personnel and Royal Thai Navy controllers on duty at the RAPCON unit directing all aircraft landing at U-Tapao Air Field, Thailand. Left to the right are: SSgt. Terry S. Bowman, CP01 Arcon Archavacom, P01 Chom Deengarm, Sgt. Alan N. Shumaker, SSgt. Louis H. How, and (standing) supervisor TSgt. John A. Watson. May 1969. (Official U.S. Air Force Photo)



U.S. Air Force Sgt. Evans Long, Jr., of the 1882nd Communications Squadron, adjusts an AN/TRN-6 TACAN at Cam Ly Airstrip, South Vietnam. May 1969.
(Official U.S. Air Force Photo)



C-140A—AFCC currently operates four of these aircraft; this picture was taken before the final camouflaging in 1979.
(Official U.S. Air Force Photo)



C-140A—As it looks today.

(Official U.S. Air Force Photo)

ET-29C—ET-29C aircraft inventory fluctuated from six in 1962 and 1963, to between two and five in the years 1968 through 1974. The ET-29C was used for facility checking.
(Official U.S. Air Force Photo)



AFCS aircraft inventory to 16, a far cry from the 59 it had operated in the early '60s. Most flight check units were inactivated.

In 1969, the FAA and AFCS formally agreed that the Air Force would be responsible for flight checking for both contingency and fixed facilities in combat areas. The FAA retained its mission of providing all other flight checking. AFCS's operational evaluation capability was further improved with the delivery of the first T-39 aircraft for use by the 1866th Facility Checking Squadron at Scott AFB, Ill., in 1969.

A Notices to Airmen (NOTAM) facility was established at Tinker AFB, Okla., in 1962, to provide aircrews with the latest information concerning the status of navigational aids, aeronautical facilities, services, and procedures. Similar NOTAM facilities were established in overseas areas. The U.S. facility was relocated to Washington, D.C., in 1967, later moving to its present location, Carswell AFB, Texas, where, after consolidation efforts, it became the Air Force Central NOTAM facility, aided by overseas operating locations in Germany and Hawaii.

SOUTHEAST ASIA

United States involvement in Southeast Asia again brought AFCS into a combat situation. The first AFCS personnel entered the area in 1961, when members of the 1st Mobile Communications Group (1 MCG) arrived in Thailand to help provide air route traffic control. Shortly thereafter, other "First Mob" teams were sent to the principal airfields in South Vietnam to set up air traffic control and teletype communications facilities. As the tempo of the conflict increased, two permanent AFCS Communications Groups were established, the 1974th, which provided all AFCS services in Thailand, and the 1964th, whose subordinate squadrons were located at bases throughout South Vietnam. The 1 MCG continued to deploy teams to fill emergency requirements.

The greater AFCS presence was matched by the demands placed on it for service. Message traffic handled by AFCS at Bien Hoa nearly doubled during the first half of 1965, while air operations there rose from 12,000 in January to nearly 30,000 in June. By 1968, the AFCS controllers at Danang handled 80,400 ATC operations monthly. That year controllers fed 857,679

operations in and out of Bien Hoa. The controllers at O'Hare International, the busiest airport in the world outside of Vietnam, handled only 650,000 operations that year.

The AFCS contribution was not limited to air traffic control and communications; the command's efforts also extended to boosting the morale of Americans stationed in Southeast Asia by carrying telephone calls and messages to the United States via the Military Affiliate Radio System (MARS). By providing high frequency radio links from AFCS MARS stations to affiliated amateur radio stations in the United States, the difficulty and high cost of making international telephone calls from Southeast Asia was alleviated, thus making it possible for service personnel to have rapid contact with their families. Over 80,000 phone patches from Southeast Asia were carried by MARS in 1968. One of the most prominent of the MARS stations in the U.S. was that operated by Senator Barry Goldwater, which handled over 100,000 calls from 1967 to 1973.

As U.S. involvement in the war declined, the AFCS presence in South Vietnam decreased, with facilities being removed or transferred to the VNAF. The 1964th Communications Group moved from Tan Son Nhut on March 27, 1973, and a two-man team from the 1 MCG provided U.S. communications from Hanoi's Gia Lam Airport during the return of the Prisoners of War in February 1973. But, as well as being present at the beginning, AFCS was there at the end. The last Air Force members to leave Tan Son Nhut AB as North Vietnamese Forces overran South Vietnam were two NCOs of the 1961st Communications Group. Assigned the task of providing backup radio links from the base during the evacuation, they departed aboard a Marine helicopter in the early morning of April 30, 1975. The 1961st, which had absorbed the mission and personnel of the 1 MCG during the drawdown, thus completed the cycle of AFCS participation in Southeast Asia in the manner described by the 1 MCG motto—"First In, Last Out."

THE 1970s

The operation and management of air traffic control services for the Air Force and other government agencies continued to be a primary function for AFCC throughout the 1970s. Even with the post-Vietnam decline in U.S. military forces, AFCC operated the largest military air traffic control system in the free world. Once again the technological advances of previous years were incorporated into AFCS facilities. Having absorbed Air Force Logistics Command's Ground Electronics Engineering and Installation Agency (GEEIA) in 1970, AFCS now not only operated and maintained the new equipment, but also installed it. Under the Rivet Switch program, vacuum tube VHF and UHF ground-to-air radios were replaced with transistorized equipment which offered greater reliability and whose improved stability allowed eventual selection of radio channels only 25 Kiloherertz (KHz) apart, as opposed to the 100 KHz separation of earlier equipment. The oldest AFCS control tower, at that time, dating from 1942, was removed from Vance AFB, Oklahoma, in 1973, one of many replaced by structures with additional space to allow the use of the growing amount of equipment needed to cope with a more complicated air traffic control environment. One example of this additional equipment was a closed circuit television device called BRITE, which displayed radar information to tower operators. During the decade, AFCC installed more than a hundred BRITE systems in AFCC towers.



MSgt. Al Tokifuju accumulates and records facility checking data on a C-140A. 1979. (Official U.S. Air Force Photo)



EC-47D—Used for facility checking, the EC-47D was phased out of the command June 1973.
(Official U.S. Air Force Photo)



B-47B— AFCC had one B-47B during its first year as a major command. It was used in a special high-altitude project.
(Official U.S. Air Force Photo)



T-33—T-33s were used for communication flight facility checking until 1970. AFCC kept an average of nine T-33s between 1961 and 1969. The inventory decreased to four by 1970.
(Official U.S. Air Force Photo)



VC-118A—This AFCS VC-118A was used as a staff transport between 1972 and 1975.
(Official U.S. Air Force Photo)

Three (and subsequently four) RC-130As were used for facility checking between 1971 and 1975.
(Official U.S. Air Force Photo)





Air traffic controllers of the 1974th Communications Group operate the control tower at Scott AFB, July 1979. (Official U.S. Air Force Photo)

The Vietnam war had illustrated the need for improved mobile and transportable communications and ATC equipment. Despite problems such as fogging window glass in the transportable control towers developed to meet one aspect of this need, AFCC had 27 of them ready for deployment by the end of the decade. A new transportable radar approach control system, the AN/TPN-19, was also developed. By the late seventies, 11 TPN-19s, incorporating phased-array radar, were ready for worldwide deployment.

In 1971, AFCS installed its first Solid State Instrument Landing System (SSILS) at Travis AFB, Calif. This new equipment, in which the vacuum tube electronics of previous ILSs were replaced by transistors, offered improved accuracy and reduced maintenance. Several dozen more SSILS were put into service during the decade. The flight check inventory gained four RC-130As for the period 1971-74.

The decade ended with AFCS being renamed Air Force Communications Command (AFCC). Its mission also continued to expand, the command absorbing the responsibility for standardized Air Force data automation programs.

AFCC AT 20

As AFCC approached its 20th anniversary as an Air Force major air command, its 49,000 members were serving at over 400 locations in the United States and 23 foreign nations. AFCC



An 1866th Facility Checking Squadron C-140A makes a low pass over the Scott AFB, Ill., runway to check the TPN-19 landing control central. 1979. (Official U.S. Air Force Photo)



Griffiss AFB, N.Y.—The old red and white tower is being dismantled, and the new white tower will be operating in its place. August 1980. (U.S. Air Force Photo by 2Lt. Jan Wood)

operated 120 towers, 149 radars, and 296 other navigational aids to support Air Force flying operations, with the command's controllers handling more than 12 million air traffic control operations a year. Between 1961 and 1981, controllers had been credited with "saving" more than 1,700 military and civilian aircraft carrying nearly 7,000 people. Aircraft saves are defined as "the safe recovery of an imperiled aircraft by air traffic controllers when there is reasonable doubt that the aircraft could have landed without assistance." The aircraft saved were valued at more than \$2 billion; the passengers and crews were priceless.

The AFCC facility checking fleet stood at six C-140A and T-39 aircraft assigned to three squadrons, the 1866th, located at Scott AFB, Ill., the 1868th at Rhein-Main AB, Germany, and the 1867th at Yokota AB, Japan. These three squadrons had flown more than 125,000 hours in 16 years without a major accident.

Sixteen AFCC aeronautical radio stations, descendants of the AACS GLOBECOM ground-to-air facilities, provide long-range communications for Air Force aircraft in flight. Several of these stations are responsible for maintaining contact with Air Force One when the President travels.

Today, AFCC transmits messages to facilities around the world within seconds. The command provides the telecommunications, air traffic control and automatic data processing services that satisfy the need for rapid and reliable command and control of U.S. Air Force elements everywhere. The command operates



Air traffic control tower at Scott AFB, Ill. Mar. 1980. (U.S. Air Force Photo)

from facilities at every USAF installation, supports other government agencies, engineers and installs communications, air traffic control and weather equipment, and can deploy mobile communications and air traffic services equipment to support global operations.

Throughout the past 20 years, the AFCC has been proud to provide these air traffic control services and telecommunications by meeting the challenges inherent in its motto and "Providing the Reins of Command."

SOURCES

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4. Shores, Louis, *Highways in the Sky*, New York, 1947.

NOTES

1. War Dept. Adjutant General Letter AG 676-3 (8-6-38) 3 Nov. 38 (available in HQ AFCC Historical Files).
2. Of the five aircraft, one was equipped with transmitters, one with receivers, two with power generators, and one with a homing beacon and technical control equipment. The planes were parked on the edge of the field and placed in operation, the receiver aircraft still being in use nearly a year later.
3. The CPN-4 automatically presented both azimuth and elevation radar returns to one final controller on one "az-el" screen, while the MPN-1 required two personnel, a controller and an elevation tracker, the latter manually following the target on a separate screen with a cursor which drove an error meter giving the controller elevation corrections to be relayed to the pilot.

4. For example, the AN/FPN-16 precision approach radar from Wright—Patterson AFB, placed in service there in 1954, was retired to the AF Museum in 1980, but nearly 40 other FPN-16s are still in use, awaiting replacement by AN/FPN-62s or AN/GPN-22s or phase out following installation of SSILS on all runways, depending on flying requirements. The first contract to buy FPN-16s was signed in 1948.
5. One AACS T-33, 53-5974, was eventually transferred to the Air Force Museum, where it is now on display, albeit in AF Logistics Command markings.
6. The B-47B, 51-2120, is on display at Whiteman AFB, Mo.

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The following are tail numbers of AFCC aircraft during the past 20 years. These are verified numbers, but not representative of AFCC's full inventory. Because there is little documentation of AFCC's aircraft, it is virtually impossible to locate all the numbers.

B-47B	C-47A	C-135A	UT-29B
52-2120	42-24303	60-378	51-5116
AT-29C	42-100993	AC-47D	51-5125
52-1092 AC-47A	43-49930	51-5149	
52-1097	43-48139		44-76598 51-5152
52-1098	AC-47D		44-76643 51-5172
52-1106	43-48902	44-77290	VC-118
52-1125	43-48783	45-946	53-3260
52-1128	43-48904	45-979	T-33
52 1139	43-48905	45-985	53-5974
52-1142	43-49103	45-1002	56-1623
52-1096	43-49190	45-1077	56-1624
AC-54D	43-49250	T-39A	53-5044
42-72503	43-49331	62-4476	56-1774
42-72565	43-49387	62-4453	56-1777
42-72689	43-49776	RC-130A	56-1771
43-17199 C-140A	57-517	53-5973	
43-17226 59-5958	57-518	53-5974	
4 3 - 1 7 2 3 7	59-5959	57-523	53-5130
C-54G	59-5960	EB-57E	53-5331
45-488	59-5962	55-4260	56-1783

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Second Lieutenant Jan Wood currently is the project officer for public affairs aspects of the Air Force Communications Command's 20th anniversary. She received her bachelor of science degree in journalism with a specialty in news editing from the University of Florida in August 1979. Lt. Wood has written for the *Antique Press*, a twice-monthly newspaper on antiques in Florida, and worked her way up through the ranks to managing editor at the *Independent Florida Alligator*, an independent daily newspaper at the University of Florida, Gainesville, Fla.



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