

FAA HISTORICAL CHRONOLOGY

Civil Aviation and the Federal Government

1926-1996



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

(1956)

Jun 25, 1956: Its interest kindled by the Harding Report (see May 4, 1955), the Legal and Monetary Affairs Subcommittee of the House Committee on Government Operations, chaired by Rep. Robert H. Mollohan (D.-W.Va.), began extensive hearings on the Federal role in aviation. The hearings centered on: the adequacy of the Federal-aid airport program; problems in air traffic control and air navigational aids, with particular reference to the TACAN/VOR-DME controversy (see Aug 30, 1956); the effect of introducing commercial jets; the organization for aviation matters within the executive branch; the operational efficiency of CAA, including the effectiveness of its five-year program; and the problem of joint military and civil use of airports.

Jun 30, 1956: A Trans World Airlines Super Constellation and a United Air Lines DC-7 collided over the Grand Canyon, Ariz., killing all 128 occupants of the two airplanes. The collision occurred while the transports were flying under visual flight rules (VFR) in uncongested airspace.

The accident dramatizing the fact that, even though U.S. air traffic had more than doubled since the end of World War II, little had been done to expand the capacity of the air traffic control system or to increase safeguards against midair collisions. Sixty-five such collisions had occurred in the United States between 1950 and 1955. This was partly because the ATC system did not have the ability to segregate VFR traffic from instrument flight rules (IFR) traffic, or slow-moving flights from faster ones. Many experts recognized a need to institute positive control -- requiring instrument flight over certain portions of the airspace irrespective of weather conditions.

In the wake of the tragedy, Congress opened hearings to probe its relationship to the general problems of airspace and air traffic control management. (See Apr 11, 1957.)

Jun 1956: The first radar in a CAA program to "circular polarize" airport surveillance was completed at La Guardia Airport. The modification program would permit the radar to "see" aircraft passing through rain and snow. With the unmodified equipment, aircraft operating in storm areas often failed to show on the scope.

Spring, 1956: The Senate Aviation Subcommittee, chaired by A. S. "Mike" Monroney (D-Okla.), held hearings relating to the resignation under fire of CAA Administrator Frederick Lee (see Dec 8, 1955) and to the larger allegation of the neglect of CAA by the Department of Commerce.

Jul 10, 1956: CAA announced the establishment in the Boston area of a Military Integration Branch of the Technical Development Center. The new office was created to provide closer coordination with military development programs, such as the SAGE Air Defense System, at Lexington and Deer Island, Mass. (See Apr 10, 1953, and Sep 21, 1959.)

Jul 24, 1956: CAA placed the Central Altitude Reservation Facility (CARF) in operation at Kansas City to handle all requests for temporary altitude reservations for military aircraft. Creation of this new facility marked a significant advance in controlling airspace at higher altitudes.

Aug 1, 1956: The President signed into law a bill permitting the Armed Forces to include flight instruction in Reserve Officer Training Corps (ROTC) programs.

Aug 30, 1956: The Air Coordinating Committee approved a study panel's recommendation that VOR and TACAN, the separate civil and military air navigation systems, be combined. VORTAC (an acronym used to describe a short-range navigation system, using the VOR directional component and the distance component of TACAN) would become a key element of the civil-military common system of air navigation and air traffic control. (See Jan 14, 1955, and Sep 16, 1955.)

Sep 4, 1956: CAA announced a reorganization designed to streamline the Administrator's office and place greater reliance on a direct line of command as the basic core of CAA organization. The reorganization abolished the Assistant Administrator positions for Operations and for Planning, Research, and Development, and grouped most CAA functions under six major program offices. The Office of Air Navigation Facilities and the Office of Air Traffic Control were created from the former Office of Federal Airways, a change that had been previously announced. (One reason for creating a separate ATC Office, according to Administrator Lowen, was "to reverse completely the approach of having the operations of the air traffic control system governed by the kind of tools the engineers give the operators." Lowen believed that the men who operate the system should develop broad performance specifications for the equipment they need and then the engineers should devise and perfect such equipment.) The Office of International Cooperation was established to replace the International Region, and the Office of Aviation Safety was redesignated the Office of Flight Operations and Airworthiness. The two other two major program offices were the Office of Airports and the Technical Development Center.

In addition, the Office of Aviation Information was abolished and its duties were divided between the Office of General Services and a Press and Publications Officer reporting to the Deputy Administrator. The reorganization extended to the regional offices, where counterparts to Washington program offices were to be established wherever there was a clear cut program that required field execution.

Sep 27, 1956: CAA announced the formation of a team of aviation specialists to provide technical assistance and guidance to Afghanistan in developing a national airways system. Under the sponsorship of the International Cooperation Administration, the modernization program

called for loans and expenditures totaling \$14,560,000 to expand Afghanistan's air transportation facilities.

Oct 6, 1956: Upgrading its fleet of flight inspection aircraft, CAA announced that it would obtain five Convair 440s, with delivery in Dec 1957 and Jan 1958. To calibrate and evaluate the performance of airway navigation aids, the agency had previously used DC-3s and Beech 18s, which had an operating ceiling of only 12,000 feet. The pressurized Convairs (later re-engined to the Convair 580 configuration) permitted testing in altitudes up to 20,000 feet. For higher altitudes up to 50,000 feet, the agency had already borrowed two Martin B-57s from the Air Force, and began operations with these in 1957. During 1956-57, CAA also obtained 40 more surplus DC-3s, most of which were eventually modified for flight inspection duty. Other changes to the flight inspection fleet in this era included the acquisition in 1958 of the first two of five Lockheed L-749 Constellations, which were used primarily in the Pacific area. (See Calendar Year 1940 and Jan 1962.)

Oct 1956: CAA leased a computer (IBM type 650) for installation in the Indianapolis ARTCC to assess the value of computers for the preparation of flight progress strips and to familiarize its personnel with this type of equipment.

Nov 8-14, 1956: At its annual convention, the Air Line Pilots Association changed its policy to allow mechanic-trained flight engineers eligible for membership. The union also adopted as mandatory policy a resolution declaring that no turboprop or turbojet aircraft be operated unless "manned at all flight stations by a qualified pilot." (See Oct 24, 1955 and Jul 21, 1958.)

Nov 16, 1956: CAA and the USAF Air Defense Command agreed on ground rules to guide a permanent Joint Radar Planning Group charged with developing programs for the joint use of civil and military radar in air traffic control. The agreement followed extensive study by the two agencies, including joint surveys and tests of operating radar facilities and operational evaluation programs conducted at CAA's Technical Development Center at Indianapolis. (See Feb 20, 1956, and Jan 9, 1958.)

Nov 20, 1956: CAA announced that it had awarded a \$9 million contract for 23 long-range radars, the agency's largest single purchase of electronic equipment to that date.

The new radars were to be used primarily for en route air traffic control purposes.

Dec 13, 1956: In Allegheny Airlines, Inc., v. Village of Cedarhurst, the U.S. Court of Appeals for the Second Circuit upheld a lower court judgment that permanently voided a Cedarhurst ordinance prohibiting flights over the village at an altitude under 1,000 feet. Cedarhurst, situated near New York International Airport (Idlewild), argued that the flights over the village constituted a "taking," as set forth by the Supreme Court in the Causby case (see May 27, 1946). In declaring the ordinance invalid, the Appeals Court said that airplanes using Idlewild did not impact on Cedarhurst to such a degree as to constitute a "taking" within the doctrine of the Causby case. The court further held that Congress had preempted the regulation of air traffic and that any local regulations contrary to Federal rules were precluded. As a consequence of the Federal government's intervention in the case -- along with 10 airlines, the Port of New York authority, and other groups -- the Chairman of CAB with the concurrence of the CAA Administrator took action to repudiate a previous recognition of State authority to adopt and enforce their own safety regulations. (See Mar 1946.)

On Mar 10, 1964, with the Federal courts having consistently struck down locally imposed altitude restrictions, the Town of Hempstead, N.Y. -- a community near the same airport, now named John F. Kennedy International -- tried a new tack: it enacted a noise ordinance that prohibited the operation of any mechanism (including aircraft) that created noise in excess of a specified level of perceived noise decibels. Though the ordinance prescribed no flight patterns, on Jul 17, 1968, the U.S. Court of Appeals for the Second Circuit found in American Airlines v. Hempstead that adhering to the ordinance would have forced aircraft to deviate from existing traffic patterns and FAA procedures. The court concluded, therefore, that the Hempstead ordinance was invalid because it (1) operated in an area preempted by Federal legislation and regulation, (2) posed an unconstitutional burden on interstate commerce, and (3) was in direct conflict with valid Federal regulations. (See May 14, 1973.)

Calendar Year, 1956 The Cessna Aircraft Company introduced its Model 172, a four-seat general aviation aircraft. During the next 30 years, sales of all versions of the 172s built in the United States totaled an estimated 37,000.

1957

Feb 11, 1957: The Senate confirmed James T. Pyle as Administrator of Civil Aeronautics. He succeeded Charles J. Lowen, who died Sep 5, 1956 (see entry for Dec 8, 1955). Pyle had been Deputy Administrator under Lowen. He was nominated as Lowen's successor on

Dec 20, 1956, and took the oath of office on an interim appointment on Dec 26, 1956.

Pyle studied business law and accounting at Princeton and Columbia Universities, aircraft mechanics at the Casey Jones School of Aeronautics, and meteorology

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and transportation at the Daniel Guggenheim School of Aeronautics, New York University. From 1935 to 1944 he had worked for Pan American Airways, and during World War II he had served in the Pacific with the Naval Air Transport Service. He returned briefly to Pan American after the war, then became president of the Air Charter Company in Denver, Colo., and later president of the Denver Air Terminal Corporation. In 1953, he became a special assistant to the Assistant Secretary of the Navy for Air, and in 1956 he joined CAA as Deputy Administrator. (See Dec 31, 1958.)

Feb 13, 1957: CAA held ground-breaking ceremonies for construction of an expanded Aeronautical Center at Oklahoma City. Financed by the city with a \$10,665,000 bond issue, the new buildings replaced temporary construction, mostly World War II metal barracks. CAA ultimately concentrated the shop and warehousing activities of the four continental regions and many of its new training programs at the enlarged facility. (See Mar 15, 1946.)

Feb 1957: CAA began installation of the first "narrow band" radio receivers under a program designed to double the number of civil communications channels available for air traffic control use. The new receivers made it possible to space transmissions 100 rather than 200 kilocycles from the adjacent channel.

Apr 11, 1957: President Eisenhower transmitted to Congress an interim report by Edward P. Curtis, Special Assistant for Aviation Facilities Planning (see May 4, 1955). The report proposed the establishment of an Airways Modernization Board as a temporary organization to unite scattered responsibilities for system development and selection. Eisenhower stated that his Administration would submit legislation for the establishment of such a board and urged its early enactment.

On May 10, 1957, Curtis submitted to the President his final report on aviation facilities planning. The report warned of "a crisis in the making" as a result of the inability of the airspace management system to cope with growing congestion and complex patterns of civil and military traffic. Curtis recommended the establishment of an independent Federal Aviation Agency "into which are consolidated all the essential management functions necessary to support the common needs of the military and civil aviation of the United States." Until such a permanent organization could be created, the Airways Modernization Board would function as an independent agency responsible for developing and consolidating the requirements for future systems of communications, navigation, and air traffic control. (See Jul 17, 1957.) Curtis's specific recommendations for improving air traffic including setting aside all airspace above a designated altitude for controlled separation at all times, and dividing certain airspace below this zone into "funnels" and

"cylinders" reserved for Instrument Flight Rule (IFR) traffic.

Apr 22, 1957: CAA commissioned the Spokane air route traffic control center.

May 1957: Using CAA and USAF aircraft, CAA conducted a service test of VOL-SCAN (a computer for automatic scheduling of aircraft approaching for landing) to evaluate the possible application of such military tactical equipment to air traffic control use in the common system.

Jun 20, 1957: CAA made public a plan for the security control of air traffic and electromagnetic radiations (SCATER) during an air defense emergency. The joint product of CAA, CAB, the Air Force, and the Navy, it was based on a plan that had been approved in 1952, expanded to include air traffic security control rules. (See Jul 15, 1952.)

Jun 30, 1957: For fiscal 1957, which ended on this date, CAA received increased funding after several years of declining or stable budgets. The agency's airway facility funds grew from \$16 million in FY 1956 to \$75 million in 1957, raising the overall CAA budget for 1957 to \$278.4 million. Further major increases in facilities and equipment funds the next two years brought the total CAA budget to \$565 million, reflecting heightened urgency concerning air traffic control problems.

Jul 6, 1957: CAA announced that high speed teletypewriters able to transmit 100-word-per-minute would be installed along its three aeronautical weather networks. The new equipment was to replace 75-word-per-minute teletypewriters used for services designated "A," "C," and "O." These three functions made up the basic weather distribution systems for the entire country's military and civil aviation. On Oct 17, 1958, CAA announced the award of a contract for 600-word-per-minute teletypewriters and related equipment to further speed the dissemination of aeronautical weather information. (See Jan 16, 1961.)

Jul 17, 1957: President Eisenhower appointed Elwood R. Quesada as his Special Assistant for aviation matters and charged him with "taking the leadership in securing the implementation of the Curtis plan of action." (See Apr 11, 1957.)

Jul 25, 1957: Dynamite exploded in the lavatory of a Western Airlines Convair 240 flying at 7,500 feet over California, blowing the person who had detonated the charge through the side of the aircraft. The plane landed successfully without further casualties.

Aug 1, 1957: The United States and Canada informally established the North American Air Defense Command (NORAD). The two countries ratified a formal agreement the following May. The organization was renamed the

North American Aerospace Defense Command on May 12, 1981.

Aug 5, 1957: The Civil Aeronautics Board adopted a rule requiring an approved Flight Data Recorder (FDR) aboard air carrier and commercial airplanes of more than 12,500 pounds maximum certificated takeoff weight, with compliance by Jul 15, 1958. The FDRs were to be capable of recording time, air speed, altitude, vertical acceleration, and heading. In adopting the rule, CAB stated that FDRs would be invaluable in investigating accidents and such incidents as extreme vertical accelerations. (At first, the rule applied only to aircraft certificated for operations above 25,000 feet, but this limitation was dropped in an amendment issued on Jul 12, 1960.)

On two previous occasions, CAB had rescinded a similar rule. Effective Apr 1, 1941, CAB had required a simpler type of FDR on certain carriers; but on Jun 9, 1944, the board found that operators could not properly maintain their recorders because of wartime material shortages. On Sep 15, 1947, the board again adopted a rule requiring FDRs on aircraft in scheduled air transportation. Contrary to expectations, however, no recording device of proven reliability was readily available, and CAB rescinded the rule on Jun 30, 1948, one day before its effective date. (See Aug 12, 1970.)

Aug 14, 1957: President Eisenhower signed the Airways Modernization Act (Public Law 85-133). The act established the Airways Modernization Board charged with "the development and modernization of the national system of navigation and traffic control facilities to serve present and future needs of civil and military aviation." The AMB was to select such systems, procedures, and devices as would promote maximum coordination of air traffic control and air defense systems. The act provided for a three-member board consisting of a chairman, appointed by the President with the advice and consent of the Senate, the Secretary of Defense, and the Secretary of Commerce. The act further provided for its own expiration on Jun 30, 1960. Since the AMB was an interim organization, the act also contained the following provision: "It is the sense of Congress that on or before Jan 15, 1959, a program of reorganization establishing an independent aviation authority, following the objectives and conclusions of the Curtis report, entitled 'Aviation Facilities Planning,' be submitted to the Congress."

The Senate confirmed the appointment of Elwood R. Quesada as chairman on Aug 16. In the following month, Malcolm A. MacIntyre, Under Secretary of the Air Force, and Louis S. Rothschild, Under Secretary of Commerce for Transportation, were designated respectively by the Secretaries of Defense and Commerce to act in their stead as members of the Board. (See Apr 11, 1957, and Nov 1, 1958.)

Aug 1957: Congress appropriated \$12.5 million for a second airport for Washington, D.C., to be built on a site

to be recommended by President Eisenhower. (See Dec 1955 & Jan 16, 1958.)

Sep 7, 1957: The President signed legislation establishing an aircraft loan guarantee program to aid local service and territorial carriers unable to obtain private loans to purchase new and modern equipment. The act authorized CAB to guarantee loans of up to \$5 million for each such airline. (see Oct 15, 1962.)

Sep 9-13, 1957: CAA held demonstrations of scan conversion equipment under evaluation at its Technical Development Center, Indianapolis. The equipment was designed to improve radar display techniques. (See Apr 27, 1960.)

Oct 4, 1957: The Soviet Union launched Sputnik I, the first manmade earth satellite, into orbit. (See Jan 31, 1958.)

Oct 29, 1957: The President approved actions of the Airways Modernization Board, taken in accordance with provisions of its basic statute, which transferred to the AMB certain funds and all functions of the Air Navigation Development Board along with several research and development programs of the Departments of Defense and Commerce relating to air traffic control. Subsequent presidentially approved orders transferring additional funds and ATC projects from the DOD. (See May 23, 1948, Jan 1954, and Aug 14, 1957.)

Nov 26, 1957: The board of directors of the Air Transport Association passed a resolution favoring the creation of an independent Federal agency to make safety rules and develop a common civil-military system of airspace control and use.

Dec 1, 1957: After receiving authority from the Civil Aeronautics Board, CAA designated all the airspace in the continental United States at or above 24,000 feet (exclusive of prohibited and restricted areas) as the "continental control area" and planned twelve "superskyways" that would provide direct, controlled high-altitude routes for transcontinental commercial flights. Positive control on these routes, however, was mandatory only during instrument conditions; during visual flight rule conditions it was provided at the option of the pilot. This meant that CAA could guarantee separation only between aircraft that filed an IFR flight plan. But these aircraft would have no protection from military and private airplanes that could still choose to fly the same airspace under visual flight rules, so long as weather permitted such flight. In any event, genuine positive control could not be implemented without CAB first permitting it by amending Part 60 of the Civil Air Regulations. (See May 28, 1958.)

Dec 6, 1957: The Lockheed 188A Electra first flew. The transport, a four-engine turboprop airliner of short-to-

measure to improve safety, the designation of these airways marked the beginning of positive control. On Sep 15, 1959, FAA made these positive control routes permanent, and began plans to develop more positive control in both a route and area basis. (See Oct 15, 1960-Mar 1, 1961.)

May 30, 1958: **The Douglas DC-8 first flew.** On Aug 31, 1959, FAA type-certificated this four-engine long-range jet airliner with a maximum capacity for 189 passengers. The plane entered scheduled airline service with Delta on Sep 18, 1959.

Jun 15, 1958: **CAA began using Greenwich mean time** for all domestic air traffic control operations.

Jul 1, 1958: The Airways Modernization Board established the National Aviation Facilities Experimental Center (NAFEC) near Atlantic City, N.J. The fledgling Federal Aviation Agency assumed all functions of the Board, including control of NAFEC, on Nov 1, 1958 (see that date). Beginning in early 1959, the Technical Development Center that CAA had operated in Indianapolis was gradually deactivated, and many of its resources, functions, and personnel were transferred to NAFEC during that year.

Jul 11, 1958: Congress removed the ceiling of \$14 million (see Sep 7, 1950) for the construction of a second Washington airport. On Aug 1, 1958, the U.S. Government took official possession of the 8,200-acre Washington international airport site at Chantilly, Va. Construction on what was eventually to become Dulles International Airport began the following month. (See Jan 16, 1958, and Jul 15, 1959.)

Jul 21, 1958: A Presidential Emergency Board issued its report on a dispute between the Eastern Air Lines and unions representing its pilots and flight engineers. President Eisenhower had appointed the board the previous January to mediate the controversy over the qualifications of the flight engineer on turbojet transports. The board concluded that a flight engineer on jetliners should have piloting qualifications and recommended that Eastern train its flight engineers to qualify for a commercial pilot's certificate. Despite the board's report in the Eastern dispute, American Airlines decided to give the third seat on the Boeing 707 to mechanic-trained flight engineers. Reacting to that decision, American's pilots walked off the job on Dec 19. After 23 days, the strike ended when American agreed to add a third pilot (a fourth crew member) to the 707 cockpit. Other airlines that traditionally employed mechanic-trained flight engineers (Pan Am, Western, Eastern, and TWA) signed similar labor agreements with the Air Line Pilots Association requiring them to employ a fourth person in the jet cockpit. (See Jul 21, 1958 and Jun 7, 1960.)

Aug 23, 1958: President Eisenhower signed the Federal Aviation Act of 1958 (P.L. 85-726) into law. Treating comprehensively the Federal role in fostering and regulating civil aeronautics and air commerce, the new statute repealed the Air Commerce Act of 1926, the Civil Aeronautics Act of 1938, the Airways Modernization Act of 1957, and those portions of the various Presidential reorganization plans dealing with civil aviation. The act assigned the functions exercised under these repealed laws, which had been dispersed within the Federal structure, to two independent agencies--the Federal Aviation Agency (FAA), which was created by the act, and the Civil Aeronautics Board (CAB), which was freed of its administrative ties with the Department of Commerce.

FAA came into existence with the signing of the Act, but assumed its functions in stages. Pursuant to the legislation, it also took over the responsibilities and personnel of the Airways Modernization Board, which were transferred to it by Executive Order 10786, on November 1. FAA inherited as a nucleus the organization and functions of CAA on Dec 31, 1958. Later (on August 11, 1960), Executive Order 10883 terminated the Air Coordinating Committee, transferring its functions to FAA. Section 103 of the act concisely stated the Administrator's major powers and responsibilities as follows:

"(a) The regulation of air commerce in such manner as to best promote its development and safety and fulfill the requirements of national defense;"

(b) The promotion, encouragement, and development of civil aeronautics;"

(c) The control of the use of the navigable airspace of the United States and the regulation of both civil and military operations in such airspace in the interest of the safety and efficiency of both;"

(d) The consolidation of research and development with respect to air navigation facilities, as well as the installation and operation thereof;"

(e) The development and operation of a common system of air traffic control and navigation for both military and civil aircraft."

CAB, though retaining responsibility for economic regulation of the air carriers and for accident investigation, lost under the act most of its former authority in the safety regulation and enforcement field to FAA. The law provided, however, that any FAA order involving suspension or revocation of a certificate might be appealed to CAB for hearing, after which CAB could affirm, amend, modify, or reverse the FAA order. Provision was made for FAA participation in accident investigation, but determination of probable cause was to be the function of CAB alone. When the FAA assumed full operational status on Dec 31, 1958, it absorbed certain CAB personnel associated with the safety rulemaking function. (See Nov 1 and Dec 31, 1958.)

Sep 2, 1958: The CAA Administrator and the Commander of the Air Force's Air Defense Command announced the establishment of a program for joint use of 31 new high-power, long-range radar facilities and plans for such

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joint use of additional facilities in the future. Under the extensive joint-use program, each agency was to budget for special equipment or modifications to meet its particular requirements, with ADC providing security guards and CAA maintaining the primary radar and other facilities used in air traffic control. (See Jan 9, 1958, and May 1959.)

Oct 1, 1958: The National Aeronautics and Space Administration (NASA) was established under the National Aeronautics and Space Act of 1958. Passage of the Space Act (signed into law by President Eisenhower on Jul 29, 1958) settled the question of whether space exploration should be under civilian or military control. The National Advisory Committee for Aeronautics (NACA), which had been in existence since 1915, was absorbed by and formed the nucleus for the new civilian space agency.

Oct 4, 1958: British Overseas Airways Corporation inaugurated the first transatlantic jet passenger service, using de Havilland Comet 4 aircraft flying between New York and London. On the 26th of the same month, Pan American World Airways began the first U.S. scheduled jet service with Boeing 707 flights between New York and Paris. On Dec 10, 1958, National Airlines used leased 707s to begin the first U.S. domestic scheduled jet airline service, flying between New York and Miami.

Oct 4, 1958: CAA issued a Technical Standard Order containing revised standards for the design of runways to meet the requirements of both conventional and turbine-powered air carrier aircraft. Superseding an October 1948 standard, the new TSO (N6b) reduced the number of airport classifications for air carrier service from six to four, with corresponding changes in runway lengths, widths, and strength.

Nov 1, 1958: Elwood R. Quesada became the first Administrator of the Federal Aviation Agency. The son of a Spanish businessman and an Irish-American mother, "Pete" Quesada was born in Washington, D.C., in 1904, and attended Maryland and Georgetown universities. He joined the Army in 1924, received his pilot's wings, and returned to civilian life before reentering active duty in 1927. Quesada was a member of the flight crew of the Army C-2 Question Mark, which, under the command of Major Carl Spaatz, broke world endurance marks in Jan 1929 by remaining in the air for more than 150 hours. During World War II, Quesada flew many combat missions and held a series of important commands, including the 12th Fighter Command, the 9th Fighter Command, and the 9th Tactical Air Command. Units under his leadership made important contributions to the success of the Normandy invasion and other campaigns by achieving air superiority, flying interdiction missions, and providing close air support to ground troops. Quesada's assignments after the war included: Commanding General, Tactical Air Command (1946); chairman of the Joint

Technical Planning Committee of the Joint Chiefs of Staff (1949); and Commanding General of Joint Task Force Three (1951). He held, with various other awards, the Distinguished Service Medal with one cluster and the Distinguished Flying Cross.

After retiring from the Air Force in 1951 with the rank of Lieutenant General, Quesada held a variety of positions in private industry before returning to government as Special Assistant to the President for aviation matters (see Jul 17, 1957) and later Chairman of the Airways Modernization Board (see entry for Aug 14, 1957). To qualify as FAA Administrator, Quesada complied with the provisions of the Federal Aviation Act by resigning his commission as a retired regular military officer. (Congress later restored his commission after he left FAA.) Sixty days after Quesada's appointment, FAA assumed the full scope of its responsibilities (see Dec 31, 1958). Quesada served as Administrator for the remainder of the Eisenhower Administration, resigning effective Jan 20, 1961 (see that date).

Nov 1, 1958: Executive Order No. 10786 transferred all functions of the Airways Modernization Board to the Administrator of the Federal Aviation Agency. This action was taken in accordance with the Federal Aviation Act of 1958. (See Aug 23, and Dec 31, 1958.)

Dec 31, 1958: The Federal Aviation Agency assumed the full scope of its statutory responsibilities. Under the provisions of the Federal Aviation Act (see Aug 23, 1958) the effective date of appointment of the first FAA Administrator (see Nov 1, 1958) determined the effective date of most of the operative provisions of the act, which were to take effect 60 days from the qualification of the first Administrator. On this date FAA superseded CAA and absorbed certain CAB personnel associated with safety rulemaking. James T. Pyle, the last CAA Administrator, became Deputy Administrator of FAA, a post he continued to hold until Nov 30, 1961 (see Feb 21, 1962).

Dec 31, 1958: The FAA Administrator signed an agreement with the military departments setting forth the conditions for assignment of members of the Armed Services to FAA.

Calendar year, 1958: This was the first year that the total number of transatlantic passengers traveling by air exceeded the number traveling by sea. (See Calendar Year 1966.)

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1959

Jan 3, 1959: Alaska entered the Union as the 49th State.

Jan 4, 1959: A published report described the successful use of Doppler navigation techniques in aerial explorations for oil in remote areas.

Jan 7, 1959: The Federal Aviation Agency began an extensive air traffic survey covering all segments of U.S. aviation--air carrier, military, and general aviation. Goals of the survey were to develop estimates of air activity through 1980 and to formulate a scientific method of forecasting air activity. FAA's sampling of a period having the lowest level of air activity was followed in July and August by a second survey providing data on the summer peak.

Jan 15, 1959: Agency Order 1 prescribed FAA's basic organizational structure. The Administrator and his Deputy were assisted by three staff offices headed by Assistant Administrators: Management Services; Personnel and Training; and Plans and Requirements (the name of which was shortened to Plans on July 10, 1960). Other staff officials reporting to the Administrator included the General Counsel, the Civil Air Surgeon, and the heads of the Offices of Public Affairs, Congressional Liaison, and International Coordination. The agency's major programs were entrusted to four Bureaus whose Directors reported to the Administrator: Research and Development (testing and development of new equipment); Flight Standards (certification of airmen, aircraft, and air carriers); Air Traffic Management (planning and operation of the airspace system); and Facilities (acquisition and maintenance of air navigation facilities and related equipment). FAA's initial field structure retained the Civil Aeronautics Administration's system of six numbered regions headed by Regional Administrators reporting to the agency chief. Three large field facilities were exempt from regional control: the National Aviation Facilities Experimental Center (NAFEC), the Aeronautical Center, and Washington National Airport.

Jan 21, 1959: The FAA Administrator submitted to Congress draft legislation to extend the Federal Airport Act to Jun 30, 1963. Intended to effect an "orderly withdrawal" from the airport grant program, the bill authorized \$200 million graduated downward over the four-year period. The bill proposed to revise the apportionment of funds among the States, increasing from 25 to 50 percent the proportion of funds that could be allocated at the Administrator's discretion regardless of geographical location. The proposal also limited grants under the act to construction of landing area facilities such as runways and control towers, while excluding such items as terminal buildings, parking lots, and entrance roads. (See Aug 3, 1955, Oct 18, 1955, and Jun 20, 1959.)

Jan 25, 1959: Transcontinental jet airliner service began as American Airlines inaugurated Boeing 707 flights between New York and Los Angeles. The new service also made American the first U.S. airline to begin domestic scheduled jet flights using its own aircraft (see Oct 4, 1958). High-altitude radar advisory service was also established, using FAA-military radar teams based at 17 military installations across the United States.

Jan 27, 1959: The Convair 880 (Model 22) first flew. On May 1, 1960, FAA certificated this four-engine medium-range jet airliner with a maximum capacity of 110 passengers. The plane, built by General Dynamics Corporation, entered scheduled service on May 15, 1960, with Delta Air Lines.

Jan 29, 1959: The Civil Aeronautics Board issued the first certificates to supplemental air carriers. The certificated supplemental operators were authorized to offer unlimited domestic charter service, as well as up to ten round trips per month between any pair of U.S. points for individually ticketed passengers or individually waybilled cargo. The Board awarded the certificates of public convenience and necessity on a two- or five-year basis to 23 applicants, most of whom were already offering substantially the same types of services under an interim exemption. (See Nov 15, 1955, and Jul 10, 1962.)

Feb 3, 1959: A Pan Am 707 entered a steep dive toward the Atlantic after its autopilot disengaged at 35,000 feet. The captain, who had been in the passenger cabin when the dive began, fought powerful gravity forces to return to the cockpit. Taking command from the copilot, he was able to end the dive at 6,000 feet. Prompted by this near-disaster, FAA in April began rigorously enforcing an often-disregarded rule requiring all flight-crew members to remain at their stations "except when the absence of one is necessary in connection with his regular duties."

Feb 8, 1959: FAA announced plans to coordinate Federal research and development in aviation weather forecasting and reporting. The announcement followed general agreement between FAA, the Department of Commerce (Weather Bureau), and Department of Defense on the need for such a joint research program.

Feb 25, 1959: In a special conference at Montreal, the International Civil Aviation Organization (ICAO), approved the distance-measuring element (DMET) as a complement to the very high frequency omnidirectional radio range (VOR). Over protests of the British delegation, which favored its own Decca Navigator System, the conferees adopted the American-developed system as a navigational-aid standard for the world's airlines until 1975. This action extended a 1949 ICAO

International Airport, then under construction at Chantilly, Va., and soon to be renamed (see Jul 15, 1959). Establishment of the new bureau was viewed as an interim measure pending enactment of legislation to set up a government corporation, within the framework of FAA, to handle the management and operational functions of both airports.

Jun 20, 1959: The President approved a two-year extension of Federal-aid to airport program (FAAP) at the current \$63 million level of funding. An administration bill had proposed \$200 million for a four-year period of "orderly withdrawal" from the aid program, while the Senate originally passed a four-year \$465 million program. The House approved a \$297 million plan for the four-year period. Refusal of the President to expand the FAAP commitment and the failure of the Senate-House conferees to resolve their differences resulted in this stopgap compromise measure. (See Jan 21, 1959 and Sep 20, 1961.)

Jul 1, 1959: A new safety rule became effective requiring that holders of first class medical certificates--airline transport pilots--must submit to an annual electrocardiogram.

Jul 10, 1959: The Federal Aviation Agency, which had assumed the safety rulemaking functions of the Civil Aeronautics Board, announced an end to the three-year near miss reporting program that had granted immunity from prosecution to pilots reporting their own involvement in near-collisions (see Feb 23, 1956). The purpose of the program had been to compile data on the numbers and causes of such incidents. Believing that the program had outlived its usefulness, FAA Administrator Quesada directed that future reports of near misses be handled by FAA in accordance with the normal investigative procedures established for other safety violation reports. (See Jun 7, 1961.)

Jul 15, 1959: President Eisenhower signed an order designating Washington's international airport under construction at Chantilly, Va., as the Dulles International Airport in memory of his late Secretary of State, John Foster Dulles. (See Jul 11, 1958, and Nov 17, 1962.)

Jul 26, 1959: FAA consolidated responsibility for the planning, coordination, and utilization of radio frequencies in a newly established Frequency Management Staff Division within its Bureau of Facilities. In addition to these functions, the new staff division was assigned responsibility for representing FAA before the Interdepartmental Radio Advisory Committee.

Jul 31, 1959: Effective this date, FAA required that one pilot at the controls of a turbine-powered airliner operating above 25,000 feet wear and use an oxygen mask, and that the other cockpit crew members wear masks ready for immediate use. This rule was modified as

experience with jet operations grew and oxygen mask design evolved. Effective Feb 1, 1960, the altitude above which one pilot was required to use a mask was raised to 30,000 feet if all cockpit crew members wore masks designed for fast donning when needed. Effective Sep 30, 1965, the altitude above which these requirements applied to turbine aircraft equipped with fast-donning masks was raised to 41,000 feet.

Aug 21, 1959: Hawaii entered the Union as the 50th State.

Sep 10, 1959: To aid in the control of civil and military air traffic, FAA put into operation in the New York area a 64-code air traffic control radar beacon system, commonly known as secondary radar. A descendant of the World War II IFF (Identification, Friend, or Foe), the new equipment was designed to reinforce primary radar signals and permit positive identification of individual aircraft carrying transponders. By May of the following year, 20 radar beacons had been put in operation at 16 air route traffic control centers. (See Apr 7, 1961.)

Sep 15, 1959: FAA adopted new procedures for handling temporary airspace reservations for mass movements of military aircraft and extended the altitude reservation service to oceanic areas. Reflecting the growing use by civil jets of altitudes above 24,000 feet--airspace previously used almost exclusively by military aircraft--the new rules required the filing of airspace reservation requests four to twelve days in advance of the mission. Missions not airborne within 30 minutes past the scheduled time of departure would be subject to FAA cancellation to make the airspace available to other users.

To supplement the work of its Central Altitude Reservation Facility (CARF) in Kansas City, Mo. (see Jul 24, 1956), FAA established gateway sectors at the Honolulu air route traffic control center and at the New York ARTCC to handle altitude reservations for military flights over the Pacific and North Atlantic Ocean areas, respectively.

Sep 20, 1959: FAA commissioned the San Antonio air traffic control center's new building, the first in a program to construct 32 new center facilities. Located in most cases away from airports to permit more space and to withstand nuclear attack on critical target areas, the buildings had an expandable design to facilitate installation and use of the latest equipment. By the end of 1960, 15 of the centers were under construction or completed.

Sep 21, 1959: FAA announced that its representatives and those of DOD and the Air Force had signed an agreement to establish nine FAA air route traffic control centers at Air Force SAGE supercombat centers. The supercombat centers were part of the SAGE (semiautomatic ground environment) system for radar surveillance and identification of air traffic for air defense. (See Jul 10, 1956, and Apr 12, 1960.)

(1959)

Sep 29, 1959: A Braniff Lockheed Electra lost a wing and exploded in flight over Buffalo, Tex., with the loss of all 34 persons aboard. (See Mar 17, 1960.)

Oct 7, 1959: Speaking on the theme "Project Friendship," FAA Administrator Quesada announced that FAA was preparing to assume the operation of about 2,095 military air traffic control facilities at 337 global locations. Under the "Friendship" plan, four types of military functions would be scheduled for transfer: air navigation and air traffic control services; military flight service; air traffic controller training; and facilities flight inspection. FAA and DOD would coordinate time phasing for absorbing military facilities, and implementation of certain parts of the project depended on further understandings with DOD and agreements with foreign countries. (See May 1959, and Dec 15, 1960.)

Oct 10, 1959: Pan American World Airways inaugurated round-the-world jet service (excluding the continental United States) using intercontinental versions of the Boeing 707. On Oct 27, Australia's Qantas Empire Airways began operating the first jet service to completely circle the globe.

Oct 15, 1959: FAA adopted an amendment to Civil Air Regulations Part 29 that clarified the physical and mental conditions disqualifying an airman from holding a medical certificate. The disqualifying medical conditions spelled out in the new revision included: diabetes mellitus requiring insulin; coronary artery disease; a history of psychosis; or certain other mental or nervous diseases such as behavior disorders, chronic alcoholism, drug addiction, or epilepsy.

Oct 31, 1959: FAA announced plans to establish a Civil Aeromedical Research Center (later named the Civil Aeromedical Research Institute) at the Aeronautical Center, Oklahoma City, to carry out its assigned responsibilities for research in aviation medicine. CARI's research would aim at developing medical data needed to meet operational problems anticipated as civil air operations moved into higher altitudes and greater speeds. (See Jul 1, 1953 and Oct 21, 1962.)

Nov 22, 1959: An extensive reorganization of FAA's Bureau of Research and Development became effective. In place of the six previous divisions plus the National Aviation Facilities Experimental Center (NAFEC) at Atlantic City, N.J., the new structure embodied ten divisions consisting of the following five staff and five program divisions, respectively: Plans, Operations, Contracts, Budget, and Administrative Services; Research, Test and Experimentation, Systems Engineering, Air Defense Integration, and Development.

Nov 23, 1959: The Strategic Air Command began using seven special air routes established for its use by FAA to carry out day and night, all-weather, low-altitude training

missions. The routes for Operation Oil Burner, code name for these SAC radar bomb runs over simulated targets throughout the country, were laid out to avoid congested population and airport centers to the maximum extent possible.

Nov 23, 1959: The Boeing 720 first flew. On Jun 30, 1960, FAA certificated the 720, a four-engine medium-range jet transport with a maximum capacity of 140 passengers. The plane entered scheduled service with United Airlines on Jul 5, 1960.

Dec 7, 1959: FAA began a stepped-up safety inspection program of all scheduled air carrier flight operations and training programs, placing its safety inspectors on a round-the-clock schedule. The concentrated 30-day program was prompted by a rash of accidents and was intended to underscore FAA's intensified commitment to air safety.

Dec 13, 1959: Effective this date, FAA realigned responsibilities for its materiel functions, management of FAA aircraft, and activities at the Aeronautical Center, Oklahoma City, Okla. The Bureau of Facilities—with "Materiel" added to its designation—was assigned expanded responsibility for procurement of materiel for the establishment, maintenance, and repair of air navigation and air traffic control equipment. The task of monitoring agencywide the application of materiel practices and policies was given to the Office of Management Services.

Reporting directly to the Bureau of Facilities and Materiel, a Facilities and Materiel Depot was established at the Aeronautical Center to perform overhaul and heavy maintenance on all FAA aircraft, centrally warehouse and distribute materiel, and operate shops for repair and fabrication of airways equipment. Responsibility for the management and light maintenance of all FAA aircraft was assigned to the Bureau of Flight Standards. The Bureau of Personnel and Training controlled the extensive training programs at the Aeronautical Center, which were grouped together as the FAA School (later known briefly as the Training Center before being renamed the FAA Academy in early 1962).

Under the new concept of organization, the Director of the Aeronautical Center was responsible for providing the physical plant and administrative and supporting services for the various agency bureaus and offices conducting programs at the Center. The operating bureaus and offices, however, exercised line authority over the programs.

Dec 1959: FAA established the world's first helicopter air traffic control service in the New York area to aid in an intensive government-industry test of all-weather helicopter operations.

1960

Jan 1, 1960: A major realignment of responsibilities for Federal Aviation Agency field operations became effective. Under the new centralized concept of operations, the Washington Bureaus of Air Traffic, Facilities and Materiel, and Flight Standards, as well as the Office of the Civil Air Surgeon, received authority to exercise direct supervision over all program activities in the field except in Alaska, Hawaii, and at the Aeronautical Center and National Aviation Facilities Experimental Center. FAA abolished the position of Regional Administrator and created, in its place, the post of Regional Manager to carry out the administrative and support functions required by the program divisions in the field. In March, FAA prescribed a standard organization for the regional headquarters under the new system. At the same time the agency gave managers in Region 1 through 4 authority to foster coordination and exchange of information among all field divisions.

Jan 6, 1960: A National Airlines DC-6B crashed near Bolivia, N.C., killing 34 passengers and crew. The Civil Aeronautics Board accident investigation revealed that the plane had disintegrated in flight as a result of a dynamite explosion. Bomb fragments were found imbedded in the body of passenger Julian Frank, who, in the preceding year, had taken out more than a million dollars in life insurance. The indication of sabotage sparked demands for the use of baggage-inspection devices and moved FAA to clamp a ceiling of \$165,000 on the amount of airline trip insurance a passenger could purchase at Washington National Airport. (See Nov 10, 1964.)

Jan 8, 1960: The New York Times reported that Pan American World Airways had put into operation near Shannon, Ireland, the first unit in a planned worldwide radio transmission system using the "forward scatter" technique. This was the first such very-high-frequency ground station to be put into operation by an airline.

Jan 9, 1960: FAA announced a rule requiring airborne weather radar on most U.S. airliners in passenger service. Deadlines for installation were: (a) Jul 1, 1960 for turbojet and turboprop airliners; (b) Jan 1, 1961, for the Douglas DC-6 and DC-7 series and the Lockheed Constellation 1049 and 1649 series; and (c) Jan 1, 1962, for all other affected aircraft. The rule exempted the Curtiss C-46, Douglas DC-3, and Lockheed L-18, as well as aircraft operated only within Alaska or Hawaii. An FAA rule issued on Apr 8, 1966, extended the requirement to large transport aircraft used for cargo only. Turbojets were required to comply by the end of 1966, and all others by the end of 1967. This rule also exempted certain older aircraft as well as operations solely in Alaska or Hawaii.

Mar 1, 1960: FAA announced that it was giving its Air Traffic Communications Stations (ATCS) and International Air Traffic Communication Stations (IATCS)

the new names Flight Service Stations (FSS) and International Flight Service Stations (IFSS) respectively to identify properly the primary functions of those stations.

The history of these evolving facilities can be traced to Aug 20, 1920, when the U.S. Post Office Department issued orders to establish the first Air Mail Radio Stations along the transcontinental air mail route. The first 10 stations were ready by Nov 1, and all 17 stations were operational by the end of 1921. When the Department of Commerce became responsible for the transcontinental airway (see Jul 1, 1927), it assumed operation of the stations, which it renamed Airway Radio Stations (see Mar 20, 1928). With other airway facilities, the stations were transferred to the Civil Aeronautics Authority in 1938 and to the Civil Aeronautics Administration in 1940. They were redesignated as Airway Communication Stations in 1938, and were later known as Interstate Airway Communication Stations (INSACS) and Overseas and Foreign Airway Communication Stations (OFACS). After becoming part of the new FAA in 1958, the facilities initially received the ATCS and IATCS designations until renamed as described above.

Mar 1-14, 1960: FAA transferred from Washington to Oklahoma City certain organizational elements responsible for: aircraft registration; preparation and administration of knowledge examinations for certification of airmen and ground instructors; and the issuance of airman certificates.

Mar 15, 1960: FAA's "age-60 rule" went into effect, barring individuals who reached their 60th birthday from serving as a pilot on aircraft engaged in certificated route air carrier operations or on large aircraft engaged in supplemental air carrier operations. The rule did not apply to commuter or on-demand air taxi operations, which employed smaller aircraft. In adopting the rule, FAA declared that a progressive deterioration of certain physiological functions normally occurs with age and that sudden incapacity due to certain medical defects such as heart attack and strokes becomes significantly more frequent in any group reaching age 60. The agency therefore imposed the age-60 rule until science provided better tests to determine individual pilots' susceptibility to these problems.

The Air Line Pilots Association sought an injunction against the new rule on the grounds that it was arbitrary and discriminatory. The courts found the rule reasonable, however, and this view was upheld by the Supreme Court in Jun 1961. (See Jun 21, 1968.)

Mar 16, 1960: New requirements regarding instrument flying skills became effective. Persons receiving a commercial pilot certificate were required to have a minimum of 10 hours of instrument flight instruction and to demonstrate their ability to control their aircraft manually while relying solely on instrument guidance.

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Successful applicants for private pilot certificates were required to have dual instruction in the basic control of the aircraft by the use of instruments, and to demonstrate their manual capability in attitude control in simulated emergencies involving the loss of visual reference during flight. The added requirements applied only to new applicants, not holders of existing certificates.

Mar 17, 1960: A Lockheed Electra lost a wing in turbulent air and crashed near the towns of Tell City and Cannelton, Ind. All 63 persons aboard the Northwest Airlines flight were killed. On Mar 20, FAA reduced the top cruising speed of the Electra Model 188 series turboprop airliners from 373 to 316 m.p.h., pending determination of the cause. Additional restrictions effective on Mar 25 included a further cutback in permissible speed (down to 259 m.p.h., or 225 knots) and a series of rigid tests and inspections. These measures seemed warranted by similarities between the Tell City crash and the crash of another Electra in Texas (see Sep 29, 1959). On Apr 12, the Civil Aeronautics Board unanimously recommended grounding all Electras not inspected since the Tell City accident. FAA Administrator Quesada decided, however, that the aircraft could safely continue to operate under the Mar 25 restrictions. On May 12, Lockheed announced its conclusion that the two aircraft destroyed in the accidents had sustained prior damage. This had permitted their power-package nacelles to wobble, allowing development of a "whirl-mode" phenomenon that overstressed their wings. (See Oct 4 and Dec 31, 1960.)

Mar 21, 1960: FAA announced the appointment of 21 of the nation's leading forensic pathologists as consultants to help determine involvement of human factors in aircraft accidents. This nationwide system of consultants supplemented an already-existing program of aeromedical investigation of aircraft accidents by FAA's Office of the Civil Air Surgeon with the assistance of pathologists from the Armed Forces Institute of Pathology.

Mar 24, 1960: The Federal Aviation Agency established a new Bureau of Aviation Medicine to replace the former Office of the Civil Air Surgeon. The elevation to bureau status pointed to the growing significance of the role of the medical program in the agency's primary mission of air safety. During the following three months, work began on a series of new aeromedical research projects concerned with the effects of aging on pilot proficiency, selection criteria for and environmental stress factors experienced by air traffic controllers, and in-flight fatigue affecting flight engineers on jet aircraft.

Mar 25, 1960: FAA Administrator Elwood R. Quesada revealed details of a new program under which agency air carrier operations inspectors were being trained as specialists in the operation of specific types of high-performance turbine-powered aircraft. The specialist program called for increased ground and flight training and

type rating of selected inspectors in the Convair 880, Fairchild F-27, Vickers Viscount, Douglas DC-8, Lockheed Electra, and the KC-135, the Air Force jet tanker version of the Boeing 707.

Apr 1, 1960: The United States launched *Tiros I*, the first of a successful series of weather satellites. Equipped with long-range television cameras, the satellite transmitted 22,952 cloud-cover photos during the 78 days that its instruments functioned.

Apr 1, 1960: In answer to an Oct 1958 suggestion by the United States, the Soviet Union informed Washington that it was ready to negotiate for regular airline traffic between the two countries. On May 1, however, an American U-2 spy plane was shot down inside the Soviet Union. Soviet Premier Nikita Khrushchev used the incident as grounds for pulling out of the Paris summit conference scheduled for later in the month. Khrushchev subsequently made increasing verbal attacks on the United States, and a U.S. RB-47 was shot down over international waters off Soviet territory. Because of this deterioration in relations, the United States on Jul 14 postponed scheduled talk on a bilateral agreement for the exchange of commercial air rights. On Aug 2, however, a Soviet delegation arrived in the United States in an exchange program between the two countries in the field of civil air transportation. The visit was part of the cultural and scientific exchange agreement signed in November 1959. In mid-September, a group of U. S. aviation experts headed by the FAA Administrator began a three-week tour of Soviet civil air transport operations and facilities. (See Nov 4, 1966.)

Apr 4, 1960: FAA placed in effect the first of a series of regulations designed to minimize aircraft noise at major airports by procedural methods while retaining safety as the primary objective. This Special Civil Air Regulation No. 438 set up rules for both civil and military aircraft operating at Los Angeles International Airport, including minimum altitudes, preferential runways, and approach and departure routes over the least populated areas. Similar special regulations covering operations at New York International (Idlewild) and at Washington National Airport were issued Oct 15 and Nov 29, 1960 respectively. (See Jul 18, 1960, and Dec 4, 1967.)

Apr 6-May 20, 1960: FAA conducted a management experiment called Project Straight-Line in the Cleveland air route traffic control center area. Limited to the Bureau of Air Traffic Management and the Bureau of Facilities and Materiel, the experiment tested the feasibility of transferring operational responsibilities in the field to a new echelon, the area office, below the regional level. (See Sep 2, 1960.)

Apr 12, 1960: FAA announced the start of a live test of the SAGE air defense system as a means of improving high-altitude air traffic control services. A part of a joint

FAA-USAF project called Trailsmoke, the flight advisory service test (FAST) aimed essentially at evaluating the capability of the SAGE system to provide civil and military radar advisory information on potential air traffic conflicts. Specific operating positions would be occupied by FAA controllers at two SAGE direction centers of an Air Defense Division monitoring air activity in the Midwest section of the nation. (See Sep 21, 1959, and Apr 17, 1960.)

Apr 12, 1960: The Defense Department released a report recommending Air Force contracts with commercial airlines for most passenger and cargo flights being operated by the Military Air Transport Service. The report was prepared by a committee appointed by the Secretary of the Air Force.

Apr 17, 1960: FAA announced a contract award totaling nearly \$6 million to the MITRE Corporation, Lexington, Mass., for advanced experimentation on automated air traffic control. Work to be performed under the contract included research and experimentation on joint use of military SAGE equipment and facilities for air traffic control, as well as for air defense purposes. FAA and the Air Force would share the cost of the project. (See Apr 12, 1960, and Sep 11, 1961.)

Apr 27, 1960: FAA announced a contract with the General Instrument Corporation for 38 radar bright display systems for Air Route Traffic Control Centers. The equipment used a dual purpose scan converter/storage tube to present a brighter display that would help controllers work more efficiently in lighted rooms. FAA and its predecessors had been involved in developing bright displays as early as Aug 18, 1952, when CAA's Technical Development and Evaluation Center reported favorably on using storage tube techniques for the purpose. At the time of the 1960 order, bright display units were already in service at 10 ARTCCs and 4 towers. On Jul 9, 1961, FAA announced an order for 40 more of the systems. (See Sep 9-13, 1957, Jul 15, 1968, and Apr 5, 1988.)

Jun 7, 1960: A wildcat strike broke out at Eastern Air Lines when an FAA safety inspector boarded an Eastern DC-8 flight and took the forward observer's seat from the third pilot. The Air Line Pilots Association had previously protested this practice as a threat to safety. FAA, however, maintained that the Douglas DC-8 and Boeing 707 had been certificated for air carrier operations with a crew of two pilots and a flight engineer and that the third pilot was superfluous. The agency immediately promulgated a regulation requiring the third pilot to give up the forward observer's seat to an FAA inspector. Meanwhile, the strike spread to Pan American but ended on Jun 21 following an injunction. (See Jul 21, 1958 and Feb 7, 1961.)

Jun 15, 1960: Regulations became effective that required applicants for a student or private pilot (class 3) medical certificate to take their medical examinations

solely from FAA-designated aviation medical examiners. Applicants for airline transport pilot (class 1) and commercial pilot (class 2) medical certificates were already required to be examined by designated medical examiners. During the past 15 years, however, student and private pilot applicants had been permitted to receive their physical examinations from any registered physician. (See Jun 1, 1945).

Jun 30, 1960: The House Committee on Science and Astronautics recommended that Congress support a Federal program for the development of a commercial supersonic transport (SST). The committee report called for completion of the B-70 bomber program, which it considered justified on defense grounds and which was expected to blaze a technological trail for the SST. The report also recommended that NASA assume leadership in devising a program for SST development. (See Jan 9, 1961.)

Jul 1, 1960: Effective this date, 5 additional megacycles of radio frequencies were allocated for FAA air traffic control communications. This was the first increase in the VHF radio spectrum allocated for communications in the common air traffic system since Oct 1946. The additional 5 megacycles (126.825 to 128.825 and 132.025 to 135.0) added 100 channels to the air traffic control system.

Jul 6, 1960: FAA certificated the single-turbine Sikorsky S-62, an amphibious helicopter, for commercial operations on passenger and mail routes.

Jul 18, 1960: As part of its noise abatement program, FAA issued a new series of detailed takeoff and landing instructions for jet airliners. Applying to individual aircraft by type and intended for inclusion in pilot training programs, the new instructions were designed to become standard methods of operating the Boeing 707, the DC-8, the Convair 880, the Lockheed Electra, the Fairchild F-27, the Viscount, and the Napier Eland Convair. The new procedures were drawn up and voluntarily agreed upon by all elements of the aviation industry during an FAA-sponsored meeting in the spring of 1960. Further such meetings were planned for reviewing and updating the procedures. (See Apr 4, 1960, and Jan 25, 1967.)

Aug 1, 1960: FAA launched Project Searchlight, an intensive and comprehensive study of its activities involving maintenance of equipment in the Federal Airways System. The agency conducted the study in several phases, completing it in early 1962. The resulting recommendations led to several improvements (see Jan 1963 and May 1, 1963), including the creation of a separate Systems Maintenance Service (see May 16, 1962).

Aug 11, 1960: Executive Order 10883, signed by President Eisenhower this date, but effective Oct 10, 1960,

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abolished the Air Coordinating Committee (see Sep 19, 1946). In a memorandum accompanying the Executive Order, the President made future coordination of aviation matters in the Federal Government the responsibility of the FAA Administrator. Since the need for such coordination would be greatest in the international area, the President suggested that the Administrator form an interagency group to develop recommendations on international aviation questions for the Secretary of State. The President stated that continuing membership in this group should be small, but ad hoc membership should be open to any other agencies having a substantial interest in matters under consideration by the group. (See Dec 19, 1960.)

Aug 25, 1960: FAA commissioned the first ASR-4 airport surveillance radar at Newark. Scheduled for installation at 34 of the nation's airports, the new radar system had a range of 60 miles, the capability of reaching an altitude of 25,000 feet, a 16-inch picture tube, and controller's-option display of either fixed or moving objects. The Civil Aeronautics Administration, FAA's predecessor agency, had commissioned the first ASRs during fiscal year 1951. (See Jun 1975.)

Sep 2, 1960: FAA Administrator Quesada approved a field reorganization of the Federal Aviation Agency in accordance with the recommendations of Project Straight-Line (see Apr 6- May 20, 1960), to be completed in phases by Jun 30, 1961. Intended to decentralize many regional responsibilities to a new and lower echelon, the area office, the reorganization would establish a "straight line" of command between the bureaus at FAA headquarters in Washington and the field facilities. Involved in the reorganization would be the field of the Bureau of Air Traffic Management, the facility maintenance and field supply functions of the Bureau of Facilities and Materiel, and the flight inspection and procedures activities and services of the Bureau of Flight Standards. The area organization was to be based on the geographic boundaries of air traffic flight advisory areas and located physically near the air route traffic control centers within the then existing 27 flight advisory areas in FAA's four domestic regions. The functions of 74 airway technical district offices and 27 air traffic supervisory offices were to be merged into the new area offices. FAA issued orders to implement the new area concept of administration on Nov 11, 1960, and Feb 6, 1961. (See Apr 7, 1961.)

Sep 8, 1960: FAA adopted the British RAE visual glide path indicator landing lights as a national standard for use at U.S. airports. Developed by the Royal Aircraft Establishment in England, the RAE system required no equipment of any kind in the aircraft cockpit. Where installed at airports, it promoted air safety by reducing the possibility that aircraft might overshoot or undershoot the runway, and it helped abate noise by keeping aircraft as high during landing approach as safety factors permitted.

Sep 8, 1960: FAA issued a new aircraft noise abatement technical planning guide for use by Federal and local officials. The guide discouraged certain kinds of construction in areas around large airports, such as residential subdivisions, schools, churches, hospitals, and other places of public assembly. Land lying immediately under the takeoff and landing patterns of jet runways, the guide recommended, should be utilized wherever possible for industrial, commercial, agricultural, or recreational purposes.

Sep 9, 1960: FAA permitted aviation medical examiners (AMEs) to deny, as well as issue, medical certificates to applicants that they examined. Previously, applicants whose fitness was questioned by the AME were automatically referred to the FAA Civil Air Surgeon in Washington. Under the new procedure, such referral ceased to be automatic, but the AME-denied airman could still appeal to the Civil Air Surgeon. Denial by the Civil Air Surgeon also remained appealable, to the Civil Aeronautics Board, as provided by the Federal Aviation Act of 1958. On Dec 14, FAA named nine members to a Medical Advisory Panel to assist the Administrator with the cases of applicants for airman certification who petitioned for exemption from medical standards.

On Oct 25, meanwhile, FAA had also announced the establishment of a Medical Advisory Council of 11 prominent doctors. The Council was appointed by the Civil Air Surgeon and assisted in developing and coordinating the aviation medicine program.

Sep 10, 1960: The Department of Defense conducted Operation Sky-Shield, a giant air defense drill, which necessitated the grounding of all commercial and general aviation aircraft throughout the North American continent for a six-hour period.

Sep, 1960: FAA commissioned its first Airport Surface Detection Equipment (ASDE-2) at Newark, N.J. Originally developed for the Air Force, ASDE was a radar system that provided air traffic controllers with information on the position of aircraft and other vehicles on the ground, even during darkness and fog. The ASDE antenna picked up this data for display on a scope in the airport tower. FAA's specifications for ASDE-2 were based largely upon an improved developmental model that had been operated under the agency's cognizance at New York International Airport (Idlewild). Besides Newark and Idlewild, eight other major U.S. airports were also scheduled to receive ASDE-2 in this initial installation program: Washington (Washington National and Dulles International), Boston, Seattle, San Francisco, Cleveland, Los Angeles, and Portland. (See Jul 5, 1977.)

Oct 4, 1960: An Eastern Air Lines Electra plunged into Boston Harbor shortly after taking off from Logan Airport, killing all but 10 of the 72 persons aboard. The accident marked the fifth Electra crash in two years and touched off renewed demands to ground the aircraft, which

was being allowed to operate by FAA under a reduced speed regime (see Mar 17 and Dec 31, 1960). The presence of many dead birds on the Logan runway helped to convince FAA Administrator E. R. Quesada that the accident had probably been caused by ingestion of birds into the aircraft's engines rather than structural failure. Quesada decided not to ground the Electra. This judgement was later supported by laboratory tests that pointed conclusively to bird ingestion. Following the Boston crash, FAA engaged in studies and research on the bird hazard and methods of protecting aircraft from the effects of bird strikes.

Oct 9, 1960: FAA commissioned the Oakland air traffic control center's new building, followed by the Atlanta center's new building on Oct 15.

Oct 15, 1960 - Mar 1, 1961: FAA successfully tested positive control on an area basis, as distinguished from a route basis (see May 28, 1958 and Apr 6, 1961), in Operation Pathfinder. As a result, area positive control was continued as a regular service in the location used for the test: airspace between the altitudes of 24,000 and 35,000 feet overlying 120,000 square miles surrounding FAA's air route traffic control centers at Chicago and Indianapolis. Any aircraft entering this airspace, whether on or off the airways, were required to be equipped with (1) a radio permitting direct communication with controllers at the centers, and (2) a radar beacon transponder for identifying the aircraft, independently of voice communications, on the controllers' radarscopes. In addition, such aircraft were required to fly on instruments regardless of weather, remaining under control of the centers while in the positive control area. Under these conditions of constant radar surveillance, aircraft required as little as half the standard separation interval.

The launching of Operation Pathfinder was preceded by more than a year of special preparations at the Chicago and Indianapolis centers--including intensive controller training, installation of additional radar and communications equipment, development of air traffic control procedures and phraseology, and an exhaustive analysis of the program through simulation studies.

Oct 18, 1960: FAA announced a comprehensive project to consolidate and simplify aviation safety regulations. The regulations had evolved without a coordinated plan, and interested persons might have to consult as many as 11 different publications to secure the desired information. Redundant and obsolete provisions and unnecessarily complicated or technical language also made it difficult to use the regulations. The purpose of the project was to eliminate these faults without changing the substance of the regulations. (See Nov 1, 1937, and Aug 31, 1961.)

Oct 29, 1960: A chartered Curtiss-Wright Super C-46F crashed at Toledo, Ohio, killing 22 of the 48 persons aboard, including 18 members of the California State Polytechnic College football team. CAB cited the

probable cause as loss of control during premature liftoff, with contributory factors that included zero-visibility fog. The pilot's license had been revoked by FAA for a series of previous violations, but he had continued flying pending an appeal before CAB. The operator, Arctic-Pacific, lost its certificate as a result of the crash. After the accident, FAA instructed its tower controllers to withhold takeoff clearance from commercial aircraft under specified conditions of low visibility.

Nov 3, 1960: FAA certificated the Beech 95-55 Baron, a four- to five-place aircraft powered by two Continental 260 h.p. fuel-injection engines. The plane had first flown on Feb 29, 1960.

Dec 15, 1960: FAA began the assimilation of six Military Flight Service Centers manned by approximately 500 men of the USAF Airways and Air Communications Services. Completed the following spring, the transfer was a part of the overall FAA-DOD plan labeled "Project Friendship" (see Oct 7, 1959, Jan 1962, and Feb 17, 1962).

Dec 16, 1960: A United DC-8 and a TWA Super Constellation collided in midair over Brooklyn, N.Y., killing all 128 occupants aboard the planes and eight persons on the ground. CAB determined that the probable cause was that the United flight proceeded beyond its clearance limit and confines of the airspace assigned by Air Traffic Control. The DC-8's high speed, coupled with a change of clearance which reduced the distance which the aircraft needed to travel by approximately 11 miles, contributed to the crash. The Board concluded that the crew did not take note of the change of time and distance associated with the new clearance. The crew's workload was increased by the fact that one of their two Very High Frequency radio navigational receivers was inoperative, a fact unknown to Air Traffic Control. FAA actions taken as a result of the accident included: a requirement that pilots operating under instrument flight rules report malfunctions of navigation or communications equipment, effective Feb 17, 1961; a program to equip all turbine-powered aircraft with distance measuring equipment, or DME (see Jun 15, 1961); a speed rule, effective Dec 18, 1961, prohibiting aircraft from exceeding 250 knots when within 30 nautical miles of a destination airport and below 10,000 feet, except for certain military jets requiring a higher minimum speed for safe operation; and other steps to strengthen air traffic control procedures.

Dec 19, 1960: The Martin Company delivered its last airplane, a Marlin Patrol Boat, to the Navy. Since the company's founding by Glenn L. Martin in 1912, it had produced more than 12,000 aircraft. Since 1948, the company had also been active in the missile-space field, and it would continue in that field.

Dec 19, 1960: FAA Administrator Quesada announced the establishment of the Interagency Group on International Aviation (IGIA). With the Administrator as chairman, the