

Celebrating

A HISTORY OF EXCELLENCE

The Federal Aviation Administration
Aviation and Space Education Outreach Program


By
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The Federal Aviation Administration's (FAA) aviation and space education coordinators and the many volunteer aviation counselors who work with students from pre-kindergarten through college are truly some of the Agency's unsung heroes. With big hearts and very limited resources they often are the public's first introduction to the FAA as they work with the nation's youth to strengthen science, technology, engineering, and mathematics (STEM) skills and introduce students to the vast number of careers available to them in the aviation industry. Through myriad programs such as aviation career education (ACE) academies, facility tours, workshops, and school visits, this dedicated group works tirelessly to let students know that when it comes to education and career choices the sky's the limit.

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FAA History Office



Building on 75 years of experience, the FAA’s aviation and space education outreach program is earning an A+ for encouraging elementary, secondary, and even college students to study math, science, technology, engineering, and a host of other disciplines. Dedicated to educating today’s youth about the aerospace career opportunities available to them, the program is reaching out to local communities across the nation, and sometimes even beyond our U.S. borders. Through aviation career education (ACE) academies, career day visits, internships, aviation expos, science fairs, educator workshops, guest lectures, and hands-on experience at FAA facilities, millions of children and young adults are learning about the myriad jobs available in the aerospace industry and the educational experience necessary to obtain and succeed at those jobs.

The FAA and its predecessor organizations pioneered the use of aviation education in working with the schools and colleges of the nation. This work began in 1935, when the Department of Commerce’s

Bureau of Air Commerce (FAA’s predecessor agency created by the Air Commerce Act of 1926) began working with the National Education Association (NEA) to define and promote aviation education. In November 1936, the Bureau of Air Commerce and NEA published a fifteen-page article on aviation education in the journal of the NEA that suggested aviation-related activities for students and outlined additional sources for educational materials.¹

Shortly after the Civil Aeronautics Act of 1938 replaced the Bureau of Air Commerce with the Civil Aeronautics Authority (CAA), Edward J. Noble, the chairman of the new organization urged a larger federal role in aviation activities:

Now, I should like to say something which I consider very important . . . that is the part that boys and girls are taking in the aviation picture. We have neglected our boys and girls. Other nations have not. In Europe aviation is begun in kindergarten with the making of paper models. Germany and Italy spend hundreds of thousands of dollars training young people. France

has appropriated millions of francs for educations purposes and in England last year 25,000 pounds were set aside for glider instruction alone . . . Here the Government sponsors the theater, and various art projects, and outside of the C.C.C. [Civilian Conservation Corps], which gives some small vocational aviation ground training, not one penny of Government money goes to flying instruction outside of the military services.²

Believing aviation education critical to the nation's future, in December 1938, Noble created a new Private Flying Division within the CAA to coordinate with and educate private fliers.³ The following month, the CAA announced plans to establish a training program at a dozen selected schools during the second semester of the 1939 school year. The Private Flying Division oversaw the experimental program, which focused on training pilots for possible military service. On February 16, 1939, Purdue University became the first school to begin pilot training under the CAA program.⁴ The 1939 Civilian Pilot Training Act made the demonstration project permanent and provided an annual appropriation. When President Roosevelt reorganized the CAA in 1940, responsibility for the Civilian Pilot Training Program (CPTP) went to the Civil Aeronautics Administration (also abbreviated as CAA). By the program's peak, 1,132 educational institutions and 1,460 flight schools participated in the program with the majority of its graduates entering military service during World War II.

The focus on the CPTP did not stop activities devoted to elementary education. In the spring of 1940, under CAA sponsorship, two groups of writers, eight at the University of Alabama and three in Washington, DC, began work on a series of ten aviation textbooks. Six of the books were aimed primarily at elementary instruction and four for more advanced students. The Government Printing Office printed and sold the books, which cost \$4.50 for the set. By July 1942, over one million copies had been sold.⁵

In April 1942, the CAA moved to provide additional aviation educational resources for teachers of





students too young to join the war effort. That month, the CAA and the U.S. Office of Education announced a joint program to “air condition” American youth by stimulating aviation education in elementary and high schools. By encouraging schools to teach air training, the two offices hoped to provide school-aged children basic aviation knowledge and increase public interest in aviation by instilling a thorough knowledge of aeronautics beginning in the earliest grades. According to Robert H. Hinckley, Department of Commerce Assistant Secretary for Air, the program was “intended to assure a flow of youth versed in aviation to meet war needs and to prepare for the tremendous post-war expansion that is in store for civil aviation.”⁶ As Hinckley bluntly stated, “History has faced us with the plain alternative: Fly – or die! The entire nation must become air-conditioned.”⁷

In Hinckley’s 1942 book, *Air-Conditioning Young America*, he explained that “to be air-conditioned means to be in a state of readiness to do something about aviation and not just feel strongly about it.” He went on to say, “The term, it should be clear, does not imply merely vocational proficiency, in some field of aviation. Rather, it means a saturation of the American people in aviation skills and a general comprehension of the significance of aviation.”⁸ In discussing the CAA’s training programs, Hinckley said:

It was necessity and not choice that led us to start the CAA program at the college level. From the beginning we realized that we were starting “wrong end to “. . . everyone agrees that any long-range educational program must be built from the ground up. It should properly begin in the primary and secondary schools . . . all children, even the youngest, are interested in planes and what makes them go . . . we believe that this spontaneous and lively interest should be channeled into the classroom to enrich the content and sharpen the relevance of the entire curriculum.”⁹

To facilitate aviation education, the CAA, Army, Navy, and Office of Education created an advisory committee, the National Committee on Aviation Education, to help promote aviation education and guide development of the curriculum, which included courses in navigation, meteorology, civil air regulations, general aircraft maintenance, and related ground subjects. The committee, comprised of educators from across the country, had five main goals:

- To serve as a general clearing house committee in which the related objectives and problems dealing with aviation education of the four Governmental agencies (Army, Navy, U.S. Office of Education, and CAA) may be discussed, duplication of purposes and operating procedures eliminated, and mutual cooperation secured.



- To stimulate a consciousness and recognition of the need for providing aviation education for American youth.
- To initiate the promotion of aviation education programs for the pre-college age group which will be rapidly geared to the war needs and which will enable these youth to prepare for a post-war period in which the airplane will bring about great changes in our economic and social life.
- To secure a rapid and sound development of aviation education in the schools of this country.
- To review and to advise concerning plans and proposals when submitted by various subcommittees.¹⁰

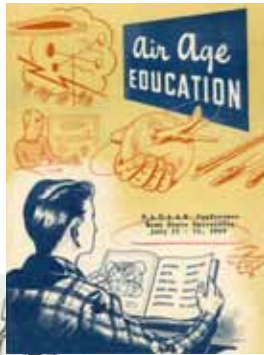
In July 1942, the CAA announced arrangements to open aviation ground school classes to high school teachers who planned to participate as instructors in the national “air conditioning” program. More than 650 colleges and universities



participated in the program to train teachers. The CAA reimbursed the colleges for each teacher who completed the required number of classroom hours and took the prescribed institution examination.¹¹

Aviation courses began in the schools in the fall term of 1942, and, according to CAA

Administrator Charles Stanton, 14,000 high schools instituted preflight aeronautics training that year. Students in those programs could receive a CAA certificate of aeronautical knowledge after completing the required courses and passing an examination. Students could then offer their certificate for 12 months after receiving it as meeting the ground subjects’ requirements for the private pilot license. The first exams were held in January 1943. By May 15, 1943, the “air conditioning” program, now called the CAA Preflight Aeronautics Program, had paid for the training of 3,500 teachers, and by June 15, 1943, 250,000 students between the ages of 16 and 18 were nearing the completion of preflight training.¹²



To provide classroom materials for the elementary and secondary schools, a team of researchers and writers from the Teacher Colleges at Columbia University and the University of Nebraska, in cooperation with the CAA and sponsored by the Institute of Aeronautical Sciences,¹³ produced a series of booklets that became known as the Air-Age Education Series. Based on the 10 volumes produced in 1940, the researchers and writers, known as the Aviation

Education Group, produced 20 manuscripts that were published by the MacMillan Company in New York in 1942 and 1943.¹⁴ Macmillan’s made publishing



history by turning them out in 38 days. An article in *Time* described the innovative series:

From the start of the new semester, "air-age education" has become the theme of teaching, from grade school to college. The program has been cooked up in less than six months. When the Civil Aeronautics Administration (backed by the Army, Navy and U.S. Office of Education) broached the idea last spring, there were no air-age textbooks, few air-age teachers . . . Ten thousand willing teachers were rounded up and buckled down to studying aeronautics during the summer . . . [the] books, from teachers' manuals to a 900-page work that covered flying from Icarus to Zero . . . were distributed to schools at record low prices. At the school discount, the 900-page Science of Pre-Flight Aeronautics cost 99¢. The books . . . add an aeronautical third dimension to mathematics, physics, biology, history, geography, economics, politics, even literature. History lessons now plug a new crop of aero-heroes (from Leonardo da Vinci to the Wright Brothers). Biology lessons describe what happens to a pilot when he blacks out. Social science lessons picture a post-war world of "aerial freight trains," and decentralized living. Anthologies of the rich, adventurous literature of flying enliven English lessons.¹⁵

During the summer of 1943, the CAA held a number of clinics around the country to assess the preflight program. According to CAA program manager, Bruce Uthus:

more high school youth wish to enroll than the present restricted facilities of schools can accommodate . . . It illustrates that young people are not averse to working strenuously in a course which is functional, interesting, practical, and realistic . . . in addition to its specific contribution to military and civil aviation, preflight aeronautics is proving itself an excellent education vehicle. Mathematics and physics are being absorbed with avidity.¹⁶

Edgar Fuller, Ph.D., chief, CAA Aviation Education Service, reiterated the importance of aviation courses in the school system:

Our schools are rapidly recognizing the implications of human flight. Most teachers know that established courses and teaching procedures in the sciences, social studies, and other fields must be adapted to the implications of human flight as well as to other modern needs. These changes demand a critical examination of our present curriculum materials and content. Boys and girls often seem to find special delight in challenging the few teachers who





*still have difficulty in distinguishing a DC 3 from a Cub. Life would be simpler if the airplane had not been developed at all. But the air age is here . . .*¹⁷

Because of its education activities, the CAA received the first National Aeronautics Association Brewer Trophy, now awarded annually to an individual, a group of individuals, or an organization for significant contributions of enduring value to aerospace education in the United States. Due to scarcity of metal during the war years, the CAA received a certificate, not a trophy, presented by Vice President Henry A. Wallace “for the Civilian Pilot Training Program, making it possible for 250,000 youths, 15 to 18 years of age, to exploit their interest in aviation, by availing themselves of aviation education on a nation wide basis in high schools.” In 1944, the CAA’s Dr. Edgar Fuller received the Brewer Trophy “for the outstanding contribution of Air Youth, in his work as Assistant Director of Aviation Education, Civil Aeronautics Administration. Dr. Fuller worked in each of the 48 states for organization of various phases of aviation education in elementary and secondary schools, as well as colleges.”¹⁸

In an early 1945 reorganization, CAA moved the Aviation Education Service under the agency’s

Manpower and Training Officer. The Manpower and Training Officer subsequently was renamed the Assistant Administrator for Aviation Training. The reorganization, however, did not affect ongoing aviation education activities. The program continued to work with individual States to develop aviation courses for high schools. As Dr. Fuller explained,

*. . . there is a growing realization that aviation in the schools is not just a war emergency measure, but is here to stay. Forward-looking educators are aware that we are entering an air age in which every student will need to know the basic principles of aeronautics and their broad social implications. Such an understanding will be necessary whether or not the student ever becomes a civil or military flier, and should be inculcated as part of the general education program.*¹⁹

To prepare students for the post-war “air age,” CAA Assistant Administrator for Aviation Training, H. W. Sinclair, announced that the CAA would hold at least 27 aviation education workshops for teachers during the summer of 1946 to help school systems adjust their aeronautical studies programs for peacetime. The workshops would also help the CAA develop new teaching materials for all grade levels. To aid schools, teachers, and pupils interested in aviation, the CAA

contracted with the Stanford University School of Education to produce a reference book. The almost 900-page *Aviation Education Source Book*, edited by Paul R. Hanna, provided curricula information and suggested ways to include aviation topics in areas such as social studies, science, language arts, mathematics, art, and music. The volume included materials for instructing students from kindergarten to ninth grade.²⁰ In October 1947, CAA announced that schools in 48 states and the territories of Alaska and Hawaii were offering aviation education classes sponsored and encouraged by the CAA's Aviation Education Division.²¹

The CAA also produced a number of brochures and pamphlets to help teachers. The publications were free and covered a number of topics, such as:

- A Guide to the Preparation of a "Statewide" Program in Air Age Education (1947)
- Aviation for Teachers, a Study Guide for Elementary and Secondary School Teachers (1945)
- Orientation in Air Age Education for Teachers (1946)
- Outline of a Junior College Program in General and Vocational Aviation (1947)
- Outline of a Suggested Program in Aviation Education for Teacher Training Institutions (1947)
- The Science of Aeronautics in Secondary Schools (1943)

Perhaps one of the most popular of its educational activities was the CAA's aviation education workshops for teachers. Working through state education departments, teacher-training schools, and other local groups, thousands of elementary and secondary school teachers received tutorials on aviation.²² In June 1948, the CAA co-sponsored with the American Council on

Education, a four-day "Demonstration School Project Conference," in Washington, DC. Fifty educators from around the country attended to share insights and get new information on CAA's education program. After the conference, at the request of the CAA, the educators returned home to make "practical studies of aviation education teaching methods" during the upcoming school year so they could help develop three instructions manuals to be made available to elementary, junior high, and senior high school aviation teachers.²³ In 1946 and 1948 the CAA, in cooperation with the American Council on Education, conducted surveys of Collegiate Courses in Aviation and related fields. In 1946, 372 colleges reported programs and in 1948 there were 331.²⁴

On June 2, 1949, CAA Administrator D. W. Rentzel announced completion of a CAA reorganization begun in October of the preceding year. As part of the reorganization, CAA created a new Office of Aviation Development. Aviation education, air marking, personal flying promotion, and flight information fell under the new office.²⁵ Reorganization did not change the mission of the aviation education activities.

Harold E. Mehrens, Ph.D., served as the CAA's supervisor of the Aviation Education Program, in the late 1940s and early 1950s. In 1951, in a joint



CAA and American Council on Education effort, Mehrens published *Adventures in Aviation Education* to aid teachers and



educators in developing aviation education programs.²⁶ As a result of this and other publications and his ongoing aviation education work, Mehrens received the 1951 Brewer Trophy.²⁷

In July 1952, the CAA announced publication of a one-year vocational course for high schools called “Exploring Aviation.” Pointing out that the situation approximated that in 1942 when the CAA first urged school systems include a pre-flight course in high schools, the Office of Aviation Development urged schools to begin such courses again. As CAA Administrator Charles Horne pointed out, “The industry is advertising continuously for electronic and aeronautical engineers . . . We directed students to the important job of flying in 1942. Now we believe the schools can serve the country’s needs by urging a technical aviation career on the boys and girls now in High School.”²⁸

Despite Horne’s public call for aviation education, program activities slowed down and eventually stopped in the early 1950s. The aviation education staff was placed in the Office of Program Coordination,²⁹ and the CAA reduced its support and activities in aviation education, severely limiting

the production of educational instructional materials and sponsorship of teacher workshops.³⁰ By the mid-1950s, the CAA had stopped all formal aviation education activities, although individual employees continued to volunteer in their local communities, providing aviation expertise to local schools and community groups.

Impetus to reinvigorate federal education training efforts came on October 4, 1957, with the launch of the first man-made satellite, Sputnik I, by the Soviet Union. Fearing the United States might be lagging behind the Soviets, government officials and educators pushed for new efforts to reform and improve education in general, and science and mathematics study in particular. The Sputnik launch, which began the space age, not only created political furor, but also led to widespread discussions on the nature and extent of education in the United States. In July 1958, Congress passed the National Aeronautics and Space Act, which created the National Aeronautics and Space Administration (NASA) as of October 1, 1958.

The Federal Aviation Act of 1958 created the Federal Aviation Agency (FAA), which replaced the CAA.





Elwood R. Quesada became the first Administrator of the new agency, which began operations on December 31, 1958. Quesada's first priority was to establish an organizational structure for the FAA. On January 15, 1959, the Administrator issued organizational order number 1. Although the new organization did not have an aviation education office, Quesada understood the benefits of and need for an aviation education program. In early 1959, Quesada wrote a report on "The Place of Information in the FAA." In that report, he addressed the need for the agency to undertake educational outreach:

A number of companies, trade associations and other organizations are actively engaged in aviation educational activities. Much of the activity seems to be diffuse. Some materials are competitive. Others are misdirected. Some are too narrowly informational and proprietary in character. The most profitable targets of opportunity are probably to be found in the secondary schools and colleges where activities related to aviation can best be integrated into the teaching of mathematics and physics. Rather than embark unilaterally on a proprietary program of its own, FAA would do better by establishing itself as a focal center or clearing house for the voluntary activities of other organizations already engaged in

aviation education. It could enlarge the effectiveness of their programs by enlisting the cooperation of the educational community. This i[t] could do by giving the program the appearance of an official imprimatur.³¹

With the establishment of NASA and FAA, and with the space race underway, the government began to make resources available for aviation and aerospace education. In 1960, Administrator Quesada re-established an aviation education program and gave responsibility for it to the Office of Public Affairs.³² Mervin K. Strickler, Jr., Ph.D., joined the FAA as its aviation education specialist. Strickler quickly began creating education partnerships with external organizations, NASA, and other government agencies. The second FAA Administrator, Najeeb Halaby, moved responsibility for aviation education to the Office of Assistant Administrator for General Aviation on August 31, 1962.³³

Strickler, now considered the "father of aerospace education," worked tirelessly to develop and promote aviation education partnerships and programs. He earned the 1966 Brewer Trophy for:

his continuous and enthusiastic contributions to the education of youth as to the place of aviation in their lives today and its promises and challenges for tomorrow; for his energetic, imaginative and innovative programs . . . which have brought the educational community in closer contact with aviation; for the inspiration and encouragement he has given to thousands of teachers and students; for his past leadership of the national program of aviation education of the Civil Air Patrol; and for his long years of service as a charter member and officer of the National Aerospace Education Council.³⁴

Under Strickler's guidance, the FAA (now the Federal Aviation Administration, an organization within the new Department of Transportation) again began publishing aviation education guides for teachers and students. In 1968, Strickler edited the seminal *An Introduction to Aerospace Education*,³⁵ which remained the standard reference guide for teachers and administrators for many years. The agency also published and/or sponsored a number of educational brochures for classroom use, such as:

- Aerospace Units for Elementary Science Classes (1967)
- Air Transportation – A History and Teaching Outline for Industrial Arts (1960)
- A Curriculum Guide for Aerospace Sciences (1967)
- Learning Through Aviation (1969)
- Teacher's Guide for SST-T-T (1969)
- Teaching Guide for an Aerospace Communications Laboratory (1968)

Strickler worked with other government agencies and the aviation industry to promote aviation education and careers. FAA became an early participant, and later a sponsor, of the annual National Congress on Aviation and Space Education, which began in 1968. Now called the National Conference on Aviation and Space Education, the association brought together educators from around the nation to share new experiences and discover learning tools that would capture the imagination



of students. Teachers learned how the wonders of aviation and space could be a useful way to teach ordinary subjects in an extraordinary way.³⁶

In addition to Strickler's aviation education work, in 1968, FAA's Personnel and Training Office began an experimental program to address long-range agency hiring needs. Pointing out that "our overall agencywide manpower position would be improved if we were to hire a larger portion of our work force from among applicants with a broader education base," Assistant Administrator Joseph Tippets proposed working with junior colleges to add aviation-related studies to their curricula. Deputy Administrator David Thomas approved the program on July 19.³⁷

The FAA released a curriculum package for the experimental aviation technology education project in September 1969.³⁸ The program consisted of "very loose, and for the most part, oral understandings and arrangements" with 20 colleges. The common factor among the 20 participating schools was that students participated in academic and FAA-paid work study programs. During the work study program, the FAA employed the students in field facilities.³⁹ By the end of 1970, 604 students had enrolled in the program.⁴⁰

After a thorough review of the experimental program, FAA Administrator John Shaffer approved continuing the program and extending it to four-year colleges.⁴¹

The FAA's and Strickler's advocacy of aviation education helped gain legislative authority for FAA's educational activities. On May 31, 1976, President Gerald Ford signed Public Law 94-353, the Airport and Airway Development Act Amendments, which, among other items, mandated the FAA aviation education program. That law required FAA:

In furtherance of his mandate to promote civil aviation, the Secretary of Transportation acting through the Administrator of the Federal Aviation Administration shall take such action as he may deem necessary, within available resources, to establish a civil aviation information distribution program within each region of the Federal Aviation Administration. Such program shall be designed so as to provide state and local school administrators, college and university officials, and officers of civil and other organizations, upon request, with informational materials and expertise on various aspects of civil aviation.⁴²



The legislative history of Public Law 94-353 further explained that:

... every effort must be made to acquaint young people with the full potential of finding careers in air transportation systems and general aviation as well as broadening their perspective of how aviation and our transportation systems can bring about a more balanced population patterns and an improved quality of life . . . FAA should vigorously pursue this program in conjunction with established aviation and aerospace programs of a similar nature being conducted under non-governmental auspices.⁴³



Passage of the law provided greater visibility to the FAA's aviation education program and provided a legislative mandate for its ongoing activities. The aviation education program remained part of the General Aviation organization until September 10, 1978, when the FAA abolished the Office of General Aviation and transferred the aviation education program to the Office of Aviation Policy.⁴⁴ Strickler led FAA's aviation education program until his retirement in 1979. He was the last FAA aviation education program manager to have a Ph.D. After retirement, he often served as a consultant to FAA and other educational organizations.



In early February 1983, Administrator Helms proposed formalizing the college education program begun in 1968 as a 5-year demonstration project called the Airway Science Curriculum.⁴⁶ The program involved establishing specialized aviation curriculum in colleges and universities and providing a method to hire 500 graduates of the program annually.⁴⁷ With Office of Personnel Management (OPM) and Congressional approval, the FAA initiated the program in fiscal year 1982 with the goal of using FAA-developed curriculum as an alternative to the traditional testing process conducted by OPM for four primary occupations: air traffic controller, aviation safety inspector, electronics technician, and computer specialist.⁴⁸

Despite the law, the agency made little progress in enhancing its education program until J. Lynn Helms became the FAA's administrator in 1981. With a keen interest in furthering the education of employees, working with colleges and universities to establish aviation curricula, and establishing aviation programs for kindergarten through high school children, Helms strengthened and institutionalized aviation education as part of the FAA's mission. Although his initiatives were delayed by the 1981 controller strike, by 1983 the aviation education program gained renewed energy and support.⁴⁵

FAA extended the program in 1988 for the purpose of validating results, since the four-year degree programs were just beginning to produce graduates.⁴⁹ The program was terminated in 1991 by mutual agreement of FAA and OPM when it became clear that FAA would not be able to hire enough candidates and obtain meaningful data to validate the results. Between the program's inception and fiscal year 1993, FAA provided over \$104 million to colleges



and universities for airway science buildings and equipment. Of this total, Congress earmarked nearly \$100 million for specific institutions and FAA provided the remaining \$4 million through a competitive application process.⁵⁰

In addition to the airway science program, the FAA also remained committed to an active aviation education program for students at all levels. In early 1983, former U.S. Representative Don Clausen (R-CA) joined the FAA as director of special programs at the request of President Ronald Reagan, a position he held until 1990. Reporting directly to Administrator Helms, Clausen became responsible for carrying out educational programs. Clausen had become interested in aviation education while serving in Congress. While in Congress, he chaired the California Governor’s Aerospace-Aviation Education Task Force from 1969-1971, authored an amendment that became part of Public Law 94-353 to establish a Civil Aviation Information Distribution Program, represented the President at the National Congress on Aviation and Space Education, represented the U.S. at the First World Aerospace Education Congress, and helped establish the Young Astronauts Program. He received the National Aeronautics Association’s

Brewer Trophy and the National Congress on Aviation and Space Education’s Crown Circle Award for his aviation and space education efforts.⁵¹

To ensure a continued focus on the agency’s educational activities, Administrator Helms, working with Clausen, issued the agency’s first policy statement on aviation education on April 25, 1983. The policy stated that:

... to assure a technically qualified workforce able to meet the challenges of changing technology, it shall be the policy of the FAA to support education at all levels within the limits of our capability to do so. As Administrator, I encourage FAA employees to assume a more active role in their communities and schools in promoting increased understanding of Aviation, Airports and Air Transportation and their economic, social and career value in our communities and society as a whole.⁵²

Helms moved aviation education responsibilities from the Office of Aviation Policy back to the Office of Public Affairs in 1983, although the move was technically not formalized until FAA issued Agency Order 1200.8B on February 4, 1984.



According to the order, the Assistant Administrator for Public Affairs, through the aviation education professional staff, had responsibility for coordinating aviation education activities with the regional directors. Each director had to designate an individual to serve as the regional education coordinator, and each regional coordinator would train local aviation education facilitators to carry out program objectives and activities in local communities at or near FAA facilities.⁵³ With the aviation education counselors in place, FAA developed an aviation education plan, released in July 1983. According to the plan:

. . . aviation education seeks to develop attitudes and skills, communicate knowledge, and impart understanding relative to the social, economic, political and technical aspects of aviation. It encompasses all levels from elementary to post-secondary; it crosses all disciplines from Agriculture to Speech and Communications. It has the special advantage of spontaneous pupil interest in aircraft – an interest that motivates them to investigate and understand the physical world, as well as helps them define career goals in aviation. Its benefits to students, teachers and communities have been widely documented and continue to be validated.⁵⁴

As part of the plan, in addition to publishing information on aviation education curricula, FAA began supplying activity books for elementary schools, such as *August Martin Activities Book* (1980) and *Aviation Science Activities for Elementary Grades* (1983). Between 1984 and 1989, the agency also published a series of career guides, such as *Pilots and Flight Engineers, Airport Careers, Aircraft Manufacturing Occupations, and Airline Careers*.

Helms' successor as Administrator, Donald Engen, continued to emphasize the importance of aviation education during his tenure. He oversaw the appointment of regional education coordinators. Many of these coordinators, however, also had responsibilities as public affairs officers. The coordinators worked to recruit, educate, and train FAA aviation education counselors who would help promote aviation education and foster a wider knowledge and deeper understanding of the FAA, the national airspace system, and all facets of aviation.

Counselors came from the FAA and the aviation industry. Many of them were retired FAA or other aviation employees, teachers, interested parents, pilots, or other aviation workers.⁵⁵

To help the new aviation education regional coordinators and facilitators, FAA contracted with Mervin Strickler to develop guidelines for the program. In "Guidelines for Federal Aviation Administration Regional Aviation Education Coordinators and Aviation Education Facilitators," he identified key goals for the FAA aviation education program:

- Make use of tested aviation education techniques in working with students, educators, representatives of local, state





and federal government agencies as well as appropriate industries, organizations and members of the public.

- Involve FAA employees as resource persons in sharing their expertise with those who will use it in planning and carrying out aviation education programs, projects, activities.
- Ensure that FAA’s mission attainment makes the fullest possible use of existing resources both within and outside the agency.⁵⁶

During this time, the FAA also initiated the Partnership-in-Education concept as a means of increasing the science, mathematics, and technology literacy of America’s youth. In addition, the agency spearheaded the Department of Transportation’s Adopt-a-School Program when it adopted Hine Junior High School in Washington, DC. As Administrator Engen explained:

*As a result of the information and technology revolution underway, there is now an education revolution to meet the challenge. The Federal Aviation Administration is on the leading edge of that revolution with its Aviation Education Program . . .*⁵⁷

Following his predecessor’s lead, Administrator T. Allan McArtor maintained a focus on education, but

he saw the aviation education program as a tool to expand community outreach and foster a better public image for the agency. Believing that the public was losing faith in the safety and integrity of the aviation system, McArtor’s Impact 88 program was designed to take “bold and decisive action” to restore that confidence. A key element in the initiative centered on a public affairs and aviation education strategy that would shape positive aviation awareness to the public and the media. FAA planned to “take its campaign to the people – to the schools, talk shows, civic centers – and explain why American aviation is critical to this country’s global competitiveness.”⁵⁸

Perhaps, in 1989, with Impact 88 advocating strong public awareness of aviation, FAA’s aviation education program reached its pinnacle, at least in terms of resources. At the national level, the aviation education staff consisted of one GM-15 program manager and four staff members ranging from GS-9 to GS-13. At the regional level, each of the nine regions and the two centers had one full-time staff member dedicated to aviation education and public outreach. The majority of these positions were located in public affairs offices and the program was fairly well funded.⁵⁹

To ensure wide distribution of its aviation education materials to the public, in January 1989, FAA established its first aviation education resource center. The centers, located at and run by universities and aviation trade groups, provided FAA printed materials, video tapes, and educational software, and answered informational requests, conducted workshops, and made aviation-related presentations to the public.⁶⁰ The agency's 50th resource center opened in 1991 at the State Transportation Library in Boston.⁶¹

In early 1989, FAA adopted Air Bear as its official aviation education mascot. Air Bear, the idea of Janice Draper of the Illinois Division of Aeronautics, had won the National Association of State Aviation Officials award for most innovative state program in 1988. Air Bear's mission was to promote aviation awareness among pre-school and kindergarten children.⁶²

Upon becoming FAA Administrator in June 1989, James Busey strongly encouraged FAA employees to become more involved in aviation education activities, and he fully supported expanding FAA's educational activities. For example, to provide students a hands-on experience, in August 1989, the FAA co-sponsored with the Civil Air Patrol and the Reserve Officers Association the first Youth Aviation Career Academy, later known as aviation career

education (ACE) academies. The first such program was designed for students at least 15 years old and lasted two weeks. Sixty-four students attended the course, which provided instruction in ground school requirements, aviation communications and electronics, and an introduction to air traffic control.⁶³ The program proved so popular that FAA announced it would expand the program to 10 locations the following summer.⁶⁴

To ensure content and consistency among all regional ACE academies, the regional coordinators prepared lessons learned and recommendations on how to operate such academies. Their input and ideas resulted in a standardized list of ACE guidelines.⁶⁵ In its third year of operations, the FAA ACE academies expanded to all FAA regions to include more children at more locations.

During the summer of 1991, FAA held 17 ACE academies for 446 children. The FAA held two types of academies. ACE I was a one-week program conducted in cooperation with colleges and universities to provide young people opportunities to explore various aviation career options. ACE II programs were more academically rigorous, preparing students for the initial steps toward certification as an air traffic controller, pilot, or communications/electronics technicians. The two-week program ended with a series of examinations.⁶⁶



Wanting a more centrally coordinated education program, in December 1989, Busey asked the FAA Executive Board for advice on “how to establish a Washington-led, national aviation education program that will inspire the Nation’s youth to choose careers in aviation.”⁶⁷ Based on the information received from the Executive Board, the Administrator established an aviation education task force in March 1990 to assess FAA’s educational activities and develop a blueprint of how the agency would accomplish its educational objectives. The task force, comprised of 15 FAA employees and one university professor, reported to the deputy administrator. To develop its education plan of action, the task force met with all segments of the aviation community, with the governors of each state, and with educational institutions, associations, and agencies. In its final report, issued November 27, 1990, the task force identified five major aviation education needs for the FAA:

1. Public Education: Aviation education activities directed toward increasing the public’s understanding of aviation services and operations.
2. Safety Education: Aviation education programs addressing aviation safety for the general public as well as airmen and the aviation community.
3. Career Education: Promotional and other marketing activities to increase awareness of job opportunities in FAA or the aviation industry, in support of recruitment.
4. Product/Service Improvement: Education undertaken to broaden the public’s knowledge of FAA’s mission, to include FAA’s certification, inspection, security, research, and enforcement functions.
5. Equal Employment Opportunity/Affirmative Action: A vigorous EEO/Affirmative action program as an integral part of all aviation education programs.⁶⁸

Task force members agreed the FAA was doing a satisfactory job in communicating directly with the general public, but that it needed to “increase its





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influence and profile at the institutional level with the educational community, state and local governments, and industry.” To establish a more effective education program, the task force identified “a significant need for increased management of an expanded, national aviation education program, including increased coordination of national efforts, establishment of an FAA information system, uniform regional implementation of all aviation education programs, increased accountability for expenditures of aviation education resources, and a systematic evaluation process for regional programs.”⁶⁹

In the report, the task force proposed over 50 initiatives to “change the course of aviation education in America.” These ranged from new programs for youth to new programs for entire communities and states. As part of an action plan included with the report, the task force also recommended FAA post information on the Federal Information Exchange (FEDIX) System, which was accessible to the general public, government agencies, and the educational community. Specific recommendations included: establishing an Aviation Education Council;

developing a comprehensive aviation education plan; creating a quarterly reporting system; establishing a line item for aviation education in the FAA budget; and hosting an annual aviation education conference.

To accomplish its recommendations, task force members suggested funding approximately \$13.6 million aviation education enhancements/initiatives in fiscal year 1991, and \$25.2 million for activities in fiscal year 1992. As explained in the report, “The funding will help establish FAA as the national leader by expanding traditional aviation education programs from single locations to at least one in every region; greatly intensify FAA’s level of interaction with Congress, state and local government, industry, and the education community.”⁷⁰

In an April 1991 speech, Busey reaffirmed the need for aviation education programs. He pointed out that few students “will seriously consider aviation careers – unless we stimulate their interest. And few of them will get the education in math and science they need for aviation careers – unless we give it to them.” He said that the FAA was doing what it could,



“but not nearly as much as we’d like, because we’re operating on a shoestring.” He continued:

Last year, I set up a task force on aviation education to look at the nation’s requirement and to see what the FAA could do to increase our support. We got a number of good recommendations, but many of them will require Congressional action. Any expansion of our educational programs, however desirable, will require more funding. As we all know, this is the Era of the Tight Budget – and I do mean tight. So we



as public and private schools at all levels . . . We aim to promote an aviation-aware society, which understands and respects the economic importance of aviation at the national and community levels.⁷²



have to set our priorities very carefully. And that means we can’t do all that we would like to do.⁷¹

With limited funding, Busey did what he could to encourage FAA employees, academia, and the aviation industry to volunteer their time to help with aviation educational programs. He issued a new aviation education policy statement as part of his initiative:

The Federal Aviation Administration (FAA) has a rich history of dedication and commitment to aviation education . . . Aviation education is an integral element of the agency’s mission and is essential to carrying out its responsibilities of promoting aviation and flight safety . . . Therefore, it will be the policy of the FAA to support aviation education and to expand its scope under the theme of “aviation awareness” with new, broader program initiatives. This expanded effort will focus on the general public, through partnerships with the private sector, states, and communities; pilots, mechanics, and other airmen; colleges and universities; as well



As part of its new aviation education action plan, FAA established a formal partnership with the National Association of State Aviation Officials to increase public awareness and to enhance aviation education programs for all levels of America’s educational system. The agency also signed a partnership agreement with

the Helicopter Society of America and the Helicopter Association International to develop, implement and support a cooperative national public awareness and aviation education program. FAA signed a similar agreement with the General Aviation Manufacturing Association to increase public awareness and understanding of the role general aviation plays in the national transportation system.⁷³ FAA subsequently partnered with the Aircraft Owners and Pilots Association, Aircraft Electronics Association, National Air Transportation Association, and the Opportunity Skyway program to increase public awareness of aviation and to support aviation education programs at all levels of the educational

system. These partnerships became increasingly important in working toward increased excellence in education. More importantly, each partnership yielded additional resources to support the FAA's aviation program initiatives. As Phillip Woodruff, then FAA's director of aviation education, explained, "The common element in all of our programs is that we aspire to accomplish them in cooperation with other government entities, and leaders in education and industry."⁷⁴

These collaborative efforts resulted in the creation of the National Coalition for Aviation Education. The founding members of the organization, now called the National Coalition for Aviation Space Education (NCASE) signed their charter and established a partnership with the FAA in 1993. Today, NCASE works with educators, government officials, and industry representatives to promote aviation and space education, marshal educational resources, and provide support for school programs at the local, state, and national levels.⁷⁵

These various educational partnerships have resulted in very specific outreach activities for school children. For example, the FAA, along with a number of other organizations, such as the Airline

Pilots Association, Air Transport Association, Air Traffic Controllers Association, and Aircraft Owners and Pilots Association became a sponsor of the International Science and Engineering Fair. As sponsors, the organizations provide scholarships and awards that recognized the achievements of high school science and engineering projects.⁷⁶ FAA also joined the National Aeronautic Association, the National Association of State Aviation Officials, and the International Committee on Aviation and Space Education of the France-based Federation Aeronautique Internationale (FAI) to sponsor the International Aviation/Space Art Contest. In this contest, where students earn national and international awards, children between the ages of five through sixteen participate in categories related to their age level.⁷⁷

As recommended by the task force, in addition to creating partnerships with state and national aviation groups, the FAA's aviation education program also began participating in an online electronic clearinghouse for government information called the federal education information exchange system (FEDIX). Through FEDIX, teachers and others interested in aviation education could access for free





current and historical information on the agency's aviation education programs. Such information included classroom materials for all levels of education, university research, industry programs and resources as well as educational materials from NASA, the Departments of Commerce, Education, and Housing and Urban Development, National Science Foundation, and the Office of Naval Research.⁷⁸

The FAA also reached out to the public magnet schools that offered specialized curricula. In 1991, the first national aviation magnet school survey identified just nine high schools with aviation programs. To encourage aviation education programs in these schools, the FAA held a national aviation magnet school conference in cooperation with the Little Rock, Arkansas, School District in November of 1991. FAA sponsored a second conference a year later in Phoenix, Arizona, in cooperation with the Phoenix Unified School District. In 1993, FAA published a curriculum guide for secondary aviation magnet schools.⁷⁹

In October 1992, the aviation education program moved from the Office of Public Affairs to the Office of Training and Higher Education, under the Assistant Administrator for Human Resource Management. Once the program moved, the Office of Human Resource Management conducted an assessment of the program to determine the most efficient future use of available resources. According to that assessment, the key goals of the aviation education program "seemed to be" to:

- Educate the general public about the value of the aviation industry.
- Facilitate the building [of] positive relationships between the FAA and Aviation industry stakeholders.
- Ensure that enough young people of all school ages are interested in Aviation careers so that the pool of qualified people for the FAA and the Aviation industry is sufficient.

- Focus on targeting of women and minorities to ensure a representative pool of potential employees for the future.
- Use aviation as a theme to help improve the educational attainments of American youth, especially in the areas of mathematics and science.

The evaluators said the aviation education program was accomplishing its goals. They expressed concern, however, that current budget cuts “will make it difficult to sustain many of the initiatives just when recent ground work has been completed and firm programmatic bases have been established.” Overall, they recommended that the education program efforts should be supported, but that the program should be reengineered to define what resources and strategies could be applied to maintain program momentum. In addition, they recommended that the program coordinators work with external organizations to leverage resources and develop measurable objectives that would help evaluate program effectiveness.⁸⁰

With declining resources for non-operational activities, FAA Headquarters support of the aviation education program declined during the mid- to late-1990s. To help fill the gap, the FAA reached out to other aviation organizations and, in 1998, along with representatives of aviation groups, teaching institutions, federal and state agencies, and businesses, helped to create the National Aviation and Space Education Alliance (NASEA). Initially, the new organization merely formalized a group that had been meeting as the New England Aviation Education Council. Established by the FAA New England Region, the council provided a forum for aviation educators to exchange ideas and address common issues. NASEA ultimately included representatives from all regions.⁸¹ The organization hoped to help with fund raising activities to support aviation education programs, stating, “In view of the loss of FAA funding of publications, ACE academies, and other historical activities, we recognize the





need for new funding sources and partnerships with industry.”⁸²

In 1998, the Alfred L. and Constance C. Wolf Aviation Fund was also established to support worthwhile general aviation projects in areas such as aviation advocacy, safety, technological innovation, public awareness, education, and pilot training. As explained on its website:

*. . . in the last several years because of federal budget cuts FAA and CAP [Civil Air Patrol] have been under increasing financial pressure. FAA has dropped from its budget funding for published materials, the camps, and even reasonable travel expenses for the aviation education coordinators . . . Fortunately, a supportive positive trend has begun with a change in focus by several of the FAA’s regional aviation education directors. For example, the New England Region’s director, with support from two succeeding FAA Regional Administrators, has stimulated the formation of state aviation and space education councils in all six states in the region. State councils have also been formed in a number of areas of the country, too, with New Jersey having one of the pioneering state programs. As with the airport advocacy groups, these efforts depend on many volunteers who are working with minimum resources.*⁸³

With FAA’s attention focused on increasing public and congressional concerns over safety, budgets, and the need for air traffic control modernization, aviation education activities fell increasingly on the shoulders of regional aviation education coordinators. In 1998, for example, the New England region spearheaded the establishment of internal and external websites for the aviation education program. By using the Internet to share education information, the FAA cancelled its FEDIX contract, which resulted in over \$100,000 savings in contract costs annually.⁸⁴ When Phillip Woodruff retired as the agency’s director of aviation education in early 2000, FAA did not fill the position at FAA Headquarters. (After his retirement, the National Aeronautics Association awarded Woodruff the 2003 Brewer Trophy “For exceptional service and dedication in the promotion of aerospace education on a national and international basis, and for building coalitions and programs that support educational objectives.”⁸⁵)

After Woodruff’s retirement, the Assistant Administrator for Human Resource Management signed a memorandum of agreement with the Assistant Administrator for Regions and Center Operations temporarily reassigning responsibility



for the national aviation education program and the FAA's role in the Department of Transportation's new Garrett A. Morgan Technology and Transportation Futures program to the New England Regional Administrator. The agreement term was from February 1 through September 30, 2000.⁸⁶ The FAA Administrator formalized this agreement on December 29, 2001, in FAA Order 1250.2, which officially gave the Assistant Administrator for Regions and Center Operations responsibility for FAA's aviation education outreach program.⁸⁷ The Assistant Regional Administrator assigned aviation education leadership responsibilities to the New England Regional Administration who designated Shelia Bauer as the national aviation education program manager.

Within its new organization, FAA's aviation education and outreach program worked to expand partnerships so it could better respond to teacher and student needs within its limited resources. As part of these efforts, the aviation education coordinators fully supported the Department of Transportation's Garrett A. Morgan Technology



and Transportation Futures program created by Secretary of Transportation Rodney Slater in 1997. As Norman Mineta, Slater's successor, explained early in his tenure as Secretary of Transportation, the program would: build a bridge between America's youth and the transportation community; support deployment of improved education technology, and ensure that America's transportation workforce is technologically literate and internationally competitive. He stated that it "is time to refocus our resources toward expanding our relationships with students through increased mentoring, tutoring, holding student and faculty summer enrichments, job shadowing, and encouraging our industry partners to help." For its efforts under the Garrett Morgan program, the FAA aviation education program received the Secretary of Transportation's Gold Medal Award for reaching out to over one million students.⁸⁸

In 2000, the FAA's aviation education and outreach program began a series of activities to get students and teachers involved in celebrating 100 years of flight. President Bill Clinton had established the U.S. Centennial of Commission in 1998 to assist in the commemoration of the centennial of powered flight and the achievements of the Wright Brothers' first powered flight. The commission served as the national and international source of information for activities commemorating the historic flight. The FAA's national aviation education program manager, Shelia Bauer, represented the FAA on the commission and, hence, was able to tie FAA's educational initiatives directly to the commission's work, which culminated in a celebration in Kitty Hawk, North Carolina, on December 17, 2001. The combined outreach efforts of the commission and its partners, such as the FAA, NASA, and U.S. Air Force, reached millions of students during the year-long celebration.⁸⁹





The need to develop and maintain a technologically literate and internationally competitive workforce, especially within the aviation community, became a major theme during the George W. Bush presidential administration. In July 2001, the administration established the Commission on the Future of the United States Aerospace Industry and gave it until March 2002 to provide recommendations for action by federal departments and agencies to support the maintenance of a robust aerospace industry. In its final report, the commission warned “Our policymakers need to acknowledge that the nation’s apathy toward developing a scientifically and technologically trained workforce is the equivalent of intellectual and industrial disarmament, and is a direct threat to our nation’s capability to continue as a world leader.” To combat this apathy, the commission recommended “the nation immediately reverse the decline in, and promote the growth of, a scientifically and technologically trained U.S. aerospace workforce. In addition, the nation must address the failure of the math, science and technology education of Americans.”⁹⁰

To help prepare the next generation of aviation workers, the FAA’s aviation education program relied heavily on FAA volunteers to meet program goals and mandates. To help clarify the policy for volunteers, the agency issued an information memorandum, which reiterated the Department of Transportation’s volunteer service policy. That policy stated that “Employees that represent the department in an official capacity, regardless of location or setting, are considered to be performing agency business during normal working hours. No charge to leave is appropriate in such situations.” FAA fully endorsed this policy and affirmed that “FAA employees engaged in activities in support of the AVED Program are considered to be as in an official capacity as representatives of the Agency . . . [however] approval of duty time is subject to operational requirements and supervisor’s approval.”⁹¹

In 2001, the FAA signed a memorandum of understanding with the Organization of Black Airline Pilots and the International Black Aerospace Council and renewed the agreements in 2008. Under the agreements the organization pledged to support

ACE academy programs and other agency-supported aviation and space educational initiatives.⁹² The agency formally signed an agreement with its long-standing education partner, the Civil Air Patrol, in 2004.⁹³ FAA signed a similar agreement with Youth Aviation Adventure in 2008.⁹⁴

To help inspire children of all ages, in February 2004, FAA signed a partnership agreement with Jamail Larkins, then, at 21, the youngest air show performer in the United States. When he was just 12, Larkins flew for the first time, taking a familiarization flight with the Experimental Aircraft Association's (EAA) Young Eagles Program. Two years later in Canada, he became one of the youngest pilots to solo a powered aircraft, and followed that feat by becoming the first and youngest student pilot in the United States to solo in a Cirrus SR20. At the time of the FAA agreement, Larkins had accumulated more than 550 hours of flight time in more than 36 different aircraft. At the partnership signing ceremony, FAA Administrator Marion Blakey said, "We want to show the youth of America that they can dream big dreams, and they can start right now . . . Jamail didn't wait for his career in aviation to take off. He took off with it." As FAA's ambassador for aviation, Larkins often speaks at ACE academies and other FAA-sponsored youth activities.⁹⁵

On January 12, 2005, FAA changed the name of its aviation education program to the Aviation and Space Education Outreach Program. The goals of the newly named program included:

- Support the agency's vision, mission, and values
- Encourage students to explore aviation and aerospace career opportunities
- Promote the skills and knowledge critical to accomplishing the agency's top priority - safety
- Emphasize FAA's responsiveness to national and aviation security challenges
- Enhance the agency's public image through service and community contributions
- Increase awareness and understanding of the agency's role in the aviation and aerospace communities
- Promote the role of commercial space transportation in an evolving aerospace traffic system⁹⁶

By adding commercial space transportation to the aviation education mission, FAA Order 1250.2a acknowledged the long-term, ongoing education activities of its Office of Commercial Space



Transportation. Because few people thought of space as a career choice, other than perhaps as astronauts, the Commercial Space Office had been working with students to explore the connection between math, science, and technology.⁹⁷

In his State of the Union Address on January 31, 2006, United States President George W. Bush announced the American Competitiveness Initiative. Bush proposed the initiative to address shortfalls in federal government support of educational development and progress at all academic levels in the science, technology, engineering, and mathematics (STEM) fields. NASA, with a large, well-funded aviation education program, took the lead on promoting STEM educational activities.

In May 2007, the FAA and NASA formalized an educational partnership aimed at developing the next generation aviation and aerospace workforce using STEM education.⁹⁸ As then Assistant Administrator for Regions and Center Operations, Ruth Leverenz explained, “NASA and FAA share a common and critical goal of cultivating a diverse, qualified workforce that will develop, manage, and operate the next generation air traffic and transportation system.”⁹⁹ The partnership’s first major activity was an air traffic control simulation software package called “Smart Skies,” an online simulator for fifth through ninth grade students that NASA and FAA air traffic controllers at the Oakland air route traffic control center developed. Smart Skies uses air traffic simulation to teach abstract thought and algebraic skills. The program is aligned to all state standards and includes all the materials and support a teacher could need. On average, students and teachers download the program over 5,000 times a month. As Leverenz explained, “Our aim is not just to launch planes . . . but to launch dreams.”¹⁰⁰







Today, Paula Lewis, Assistant Administrator for Regions and Center Operations, continues to champion the AVSED program. With her support, the program continues to grow and reach out to new corners of the aerospace community. AVSED has developed a new

program to address STEM education and workforce concerns is the Real World Design Challenge (RWDC), a partnership of Federal and state agencies, private industries, and educational organizations. The RWDC is an annual national engineering competition for high school students promoting collaboration between students and professional engineers across the country. Using state-of-the-art computer-aided design and fluid dynamic software, donated by Parametric Technology Corporation and Mentor Graphics, students develop engineering solutions to problems developed by leading industries, such as Cessna and NASA.¹⁰¹ During the first year, ten states participated and by 2010 students in twenty-two states completed the competition. Eventually all fifty states will participate. The FAA has provided

marketing materials, as well as speakers for state events in support of the challenge. This program has received recognition by the White House, the National Governors Association, and the Aerospace States Association.

Another STEM partner, Build-A-Plane, brings aircraft maintenance instruction to several small communities in Alaska and across the country.¹⁰² The organization works with private individuals and schools to provide donated aircraft as teaching tools for students. Build-A-Plane has dozens of projects operating in the United States and several overseas.

To ensure that FAA co-sponsored ACE academies met STEM mandates, in 2007, the FAA issued a new “ACE Academy Director’s Guide.” Over the years, limited resources resulted in the inability of the FAA to sponsor financially ACE academies. Instead, it began co-sponsoring the academies with external partners. The 2007 Director’s Guide addressed STEM needs by providing examples of aerospace thematic STEM curriculum into its syllabus and mandating its use as a requirement for FAA co-sponsorship. Interested partners had to contact FAA regional aviation education coordinators to establish ACE partnerships.¹⁰³

Over the years, FAA's aviation education coordinators have received numerous external accolades for their work. For example, in 1995, Mary Lou Dordan received the Civil Air Patrol's Brewer Award, which is given "In commemoration of Frank G. Brewer and his lifelong interest in aviation, youth, and education; and in recognition of unselfish contribution to the advancement of youth in aerospace activities."¹⁰⁴ The following year, FAA's Jack Barker earned the National Aeronautic Association's Brewer Trophy "For more than 30 years of service and dedication to aerospace education so that the next generation of Americans will know and appreciate the economic and social importance of aviation to the nation. His continuing, life long dedication to aviation and space education has pioneered the development of aerospace education."¹⁰⁵ The National Coalition for Aviation Education awarded Mary Lou Dordan its 2001 Dr. Mervin K. Strickler, Jr. Award for Aviation Education Excellence for her longstanding personal commitment to furthering aviation education.¹⁰⁶ In 2003, Shelia Bauer received the Dr. Mervin K. Strickler, Jr. Award for her life long service and commitment to Aviation Education, the 2008 Crown Circle Award from the National Coalition for Aviation and Space Education for her outstanding leadership in aerospace education, and received the Secretary of Transportation's Silver Meritorious Award for "accomplishments throughout her career" as the FAA's national aviation and space education program manager.¹⁰⁷



Hoping to get higher visibility for its aviation and space education activities, the FAA, for the first time, mentioned the program in its strategic 2006-2010 Flight Plan. Because those activities relied heavily on employee volunteers, the FAA instituted a policy that allowed paid leave "for employees to participate in activities that are mission-related, officially sponsored or endorsed by DOT and/or FAA, or will enhance an employee's professional skills and development."¹⁰⁸

The 2007-2011 Flight Plan included a new aviation education initiative: "to focus and refine the Aviation and Space Education Program to integrate aerospace applications into existing scientific, technical, engineering and mathematical (STEM) curricula." The strategy, however, had no performance targets associated with it.¹⁰⁹ The initiative, without performance targets or goals, has remained in the annual flight plan.



Despite inclusion in the FAA's recent strategic plans, the aviation education and space program remains resource constrained. A recent General Accountability Office study on federal funding of kindergarten through twelfth grade educational activities, found that FAA funding for its aviation and space education program was \$0 in 2006, \$0 in 2007, and \$24,000 in 2008.¹¹⁰ With limited program funding, the FAA's regional and center aviation education program managers have maintained

a FAA aviation education presence within their own regions through a variety of innovative partnerships with local governments, communities, and universities. They have partnered extensively with local Civil Air Patrol wings to conduct teacher workshops, make presentations at local aviation and education meetings and conferences, co-sponsor ACE academies, and provide educational materials to the public at a variety of venues. Their

website, www.faa.gov/education, provides easy access to information for students and teachers.

The agency has traditionally relied heavily on the volunteer efforts of its employees to carry out its aviation and space education activities. FAA employees have served as informal education ambassadors, providing facility tours for local children, volunteering in schools, tutoring students in after school programs, and serving as mentors. As FAA Administrator Marion Blakey explained at an employee town hall meeting in 2007, “Our aviation education program . . . [has] staged more than 3,300 events over the last four years, reaching more than 81,000 students and 57,000 teachers . . . most of this was done by FAA employees who volunteered their time.”¹¹¹

Today, with the support of FAA Administrator J. Randolph Babbitt, the FAA aviation and space outreach program continues to build on its rich heritage. James P. Brough, FAA’s national AVSED program manager since 2008, leads the agency’s regional program managers, volunteers, and counselors who are working every day to provide information and quality programs for the nation’s students and educators. In 2009, FAA’s aviation and space education coordinators and volunteers

participated in and/or sponsored over 1,200 programs, including 77 ACE academies, 36 teacher workshops, and 217 career days. These programs reached approximately 325,000 students and nearly 18,000 teachers.

This spirit of community service will be increasingly important as FAA strives to meet new educational initiatives and mandates. President Barack Obama, for example, has called for a larger commitment to increase STEM literacy as part of his Educate to Innovate effort.¹¹² On March 30, 2010, the President signed the Health Care and Education Reconciliation Act, which among other things, included \$2 billion over four years.¹¹³ Although it is too early to know exactly what role the FAA will play in these initiatives, one thing is clear, the FAA’s aviation education coordinators and volunteers will play a part. With 75 years of experience in working with schools, universities, industry, and academia, the FAA has the knowledge and skills to make a difference in today’s educational system.







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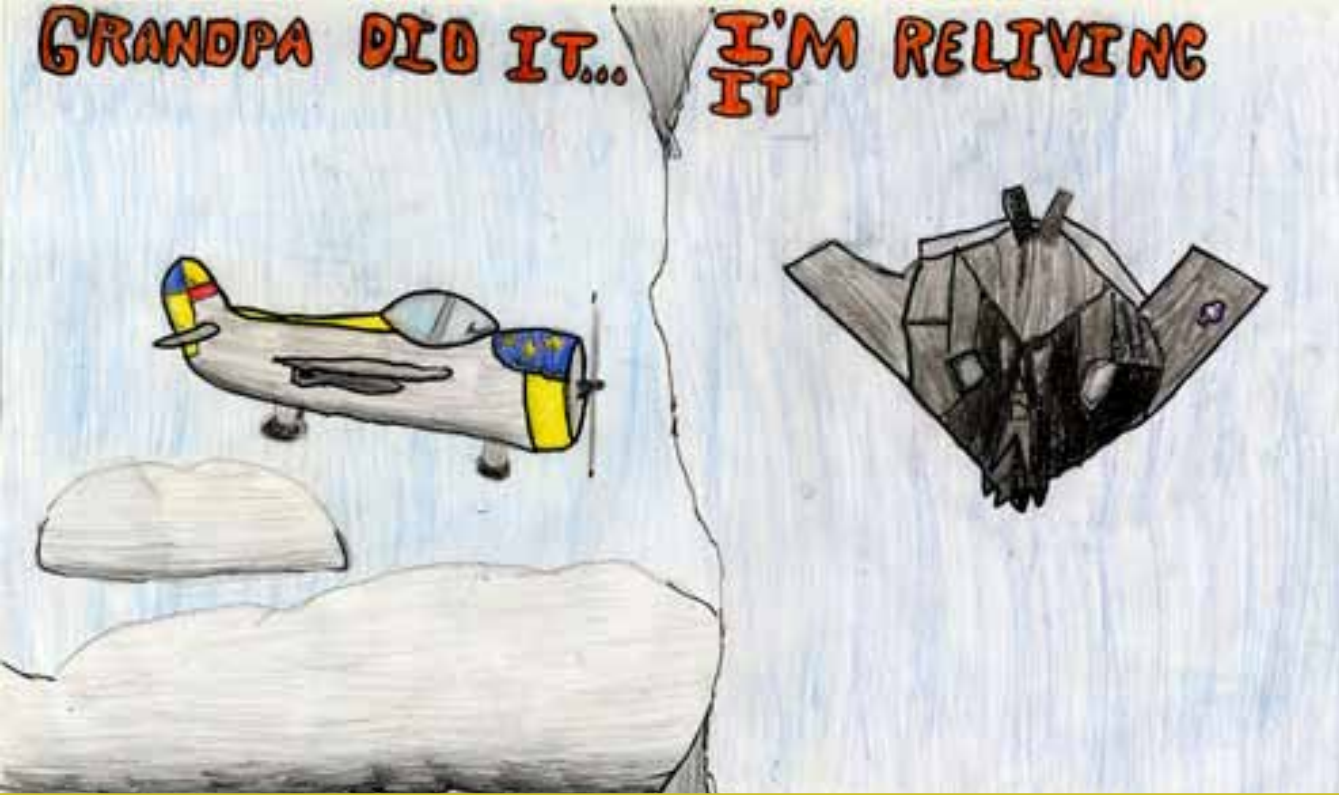
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GRANDPA DID IT... I'M RELIVING IT



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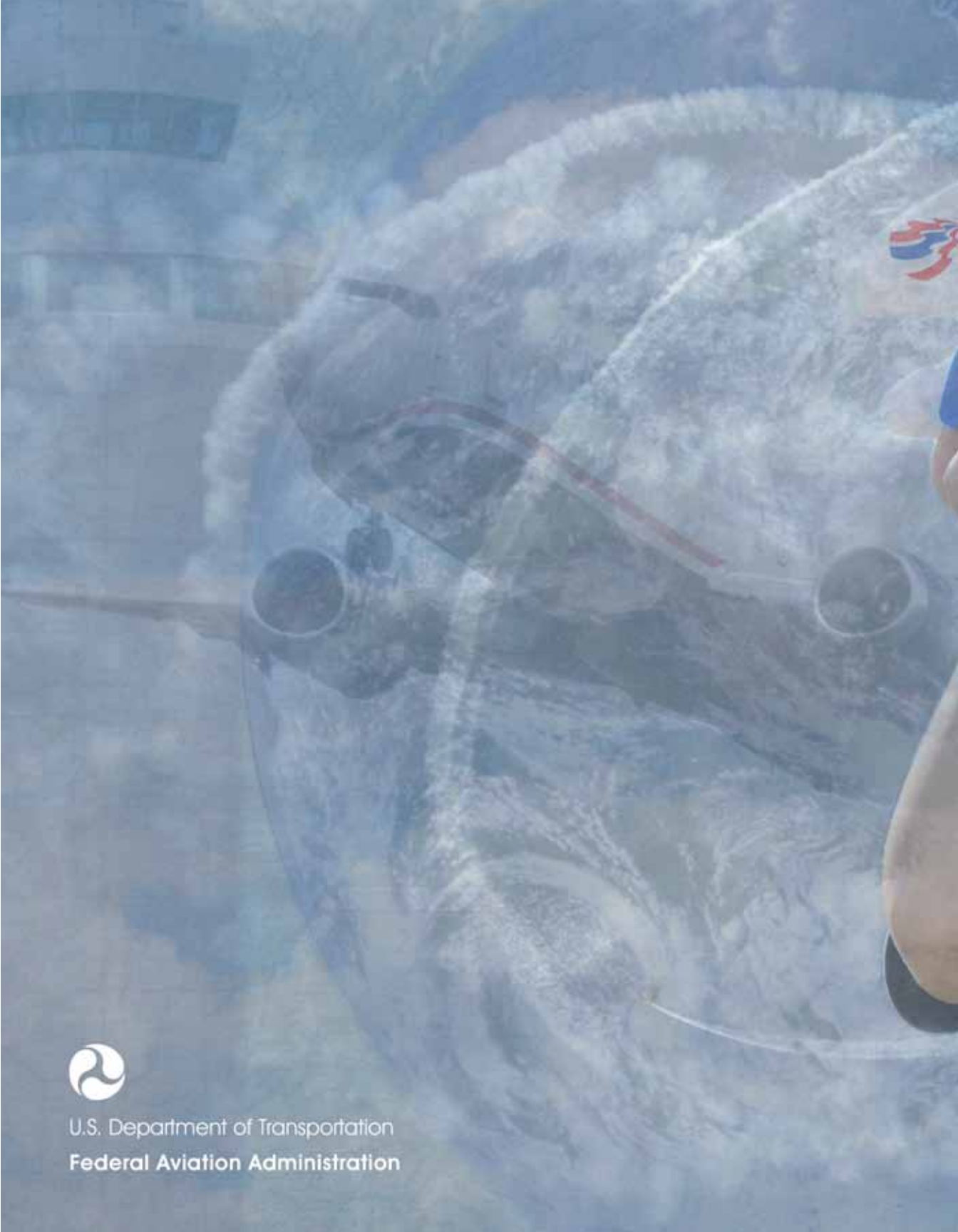
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